

WASCANA CENTRE LANDSCAPE ASSESSMENT



FINAL REPORT

Submitted to
Wascana Centre Authority

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EXECUTIVE SUMMARY

Crosby Hanna and Associates was engaged by Wascana Centre Authority (WCA) to perform a landscape assessment for all the lands within the Wascana Centre boundary. The landscape assessment included: “soft landscape” - turf, trees, shrub beds, flower beds, naturalized areas, play fields, ball diamonds, and crusher dust / wood chip pathways; bollards; site furniture; irrigation; select art features, monuments and memorials; and two play areas. The project team included those with expertise in plant assessment, structural engineering, art conservation and play structure assessment, as well as computer programming.

Landscape data was collected electronically using handheld GPS enabled devices into which the approved assessment criteria had been loaded. 2009 air photos purchased from the City of Regina were also uploaded and served as a guide while assessors were in the field. Landscape assessment was completed between June 6th and July 10th, 2012. In total 13,405 points of data were collected which represented 1.1 million m² of turf, over 60,000 trees, and 157,000 m² of shrub beds, as well as other landscape items.

In general, the landscape in a large portion of Wascana Centre is a combination of trees and shrub beds in irrigated turf. The majority of the tree and shrub plantings are old and will soon be coming to the end of their useful life. The aging tree and shrub population requires regeneration if it is to be retained in a healthy state. In some areas, new planting is occurring, but more is required. The existing trees and shrubs require pruning to remove dead material and improve plant health.

Wascana Centre contains a number of expansive rototilled beds of trees. We understand that rototilling is used to address weeds; however, rototilling can damage tree roots and creates a risk of damaging trunks and lower branches. It is typical to find rototilled shrub beds as well. Current practises would recommend that shrub beds be mulched to improve moisture retention and to reduce weed growth. Wascana Centre does contain some mulched beds; however, the practise is not widely or consistently applied. Careful consideration should be given to the future use of rototilled tree beds, as large areas of mulch may not be feasible. A re-design in these areas could create more space for park users.

Another important concern is the prevalence of weedy or invasive species. These are mostly found in the naturalized areas. Especially concerning are the caragana that can be found along the shoreline, and noxious weeds that can be found in the naturalized grass areas.

The existing irrigation system is aging, highly manual, and contains outmoded materials and components. A recommendation is made to automate the system including electric valves, controllers, a central controller and environmental sensors. Employing these

methods and technologies will improve the efficiency of watering and reduce the manual input required to operate the system.

The structural assessment included 18 monuments, structures and art features. A number of minor improvements were recommended such as filling concrete cracks, replacing grout and sealing concrete. Of all the items that were assessed, Speakers Corner requires the most intervention, with the rebuilding of a wall, replacement of brick and unit pavers.

The art assessment included 6 pieces. The most common concerns were biological build-up, scratches, cracks and grout. The Lakeshore Park Totem Pole is highlighted as the piece that requires the most attention. As it is made of wood, it contains a number of long and deep cracks, as well as significant rot at the top and bottom. The assessor has recommended that an art conservator specializing in totem poles be engaged to complete the work.

The Candy Cane and Wascana Park play structures were assessed in relation to current CSA requirements. While minor improvements are required in Candy Cane Park, it is recommended the Wascana Park play equipment be replaced completely.

The landscape assessment provides Wascana Centre with good baseline data on the existing conditions of their landscape. The existing conditions and the associated costs to bring conditions to an acceptable level will help to prioritize funding and projects. The method of collecting data is repeatable and Wascana Centre could use it again to track the effect that prioritized funding has on the landscape condition.

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ACKNOWLEDGEMENTS

We extend our thanks to Wascana Centre personnel who participated in the landscape assessment through their feedback and reviews, the timely provision of documents and drawings, and as invaluable resources regarding Wascana Centre landscape assets.

Thanks to all members of the consulting team. Bill Kalyn was responsible for the development of the assessment criteria, field coordinator for data collection, summaries of overall park status, and general reports on trees, shrubs and natural areas for the parks system. Other landscape data collection personnel were Christine Bachinsky and Stephanie McKichan. Computer programming, database queries and data analysis was completed by Johannes Lindenbaum. Jim Kenyon and Brad Taylor (J.C. Kenyon Engineering) completed structural assessments. Jerome Pratchler reviewed play structures and Brenda Smith completed the assessment of art features.

1. INTRODUCTION

In March of 2012 Crosby Hanna & Associates (CHA) was retained by Wascana Centre Authority (WCA) to conduct a landscape assessment for all the lands within the Wascana Centre boundary. Items included in the audit: turf, trees, shrub beds, flower beds, soccer/football fields, ball diamonds, crusher dust and wood chip walkways, natural areas, bollards, site furniture, irrigation, art features, two play areas, monuments and memorials. Hardscape features such as concrete and asphalt walkways and retaining walls were excluded from this assessment, but were included in the infrastructure audit conducted by Associated Engineering which was completed concurrent with this study.

This audit is intended to provide an evaluation of the current condition of all Wascana lands; to develop a framework for collection of data relating to the current condition of park components; and to develop budget estimates for landscape upgrades. It was considered important to collect data that was comprehensive and reproducible so that the results could be updated and compared to earlier data as required for monitoring maintenance progress and identifying significant problems. The collected data is to be used to compare landscape components with new condition and determine the cost to upgrade to new or acceptable condition where required. In addition, components whose condition present a safety hazard were to be identified as needing urgent attention so expedient maintenance repairs can be implemented.

This report is intended to provide a general overview of the status of Wascana lands and identify costs associated with upgrading to an acceptable standard. In addition to the report, the final product includes digital copies of the collected landscape data, the database component of the data, spreadsheets of reported landscape data; brief written summaries; recommended upgrades for all elements; and construction costing.

2. METHODOLOGY

2.1 LANDSCAPE

2.1.1 AREA DEFINITION

Wascana Centre personnel met with the Consulting Team and agreed to subdivide the entire Wascana lands to facilitate assessment by sectors of the park rather than collecting all data as a single area. The most recent Master Plan (2006) was used as the basis for the subdivision. The subdivision followed boundaries suggested by the Manager of Maintenance and the Forestry/Horticulture Manager. Generally the sub-areas are defined by: roadways or pathways; maintenance boundaries; and similar functional use. The data analysis would, therefore, be presented in discreet manageable units that were already associated with various maintenance and operations functions. A list of and map indicating these areas can be found in Section 4 of this report.

2.1.2 DESKTOP REVIEW

The Consulting Team carried out a review of available Wascana Centre Authority base information related to the project area. This information consisted of as-built documentation and digital drawings. WCA purchased 2009 aerial photographs from the City of Regina. These were inserted into ArcGIS software (version 10) and geolocated. In addition, CHA reviewed archived drawing files for further information. Previous documents such as the tree inventory were provided by WCA for review and information.

Existing electronic and hard copy mapping of irrigation systems were reviewed. To the extent that information was available, the installation dates and the types of components were documented. Field review of the existing system was not completed as this intensive review was beyond the scope of this project.

2.1.3 WASCANA CONSULTATION

The Consulting Team held several meetings with Wascana Centre Authority Operations and Maintenance personnel to discuss the current condition of park assets and identify known issues, and problems. Specifically these meetings were used:

- to discuss and confirm the proposed landscape assessment criteria;
- to determine sub-area boundaries and identification names;
- to identify irrigation system components and concerns;
- to identify any initial maintenance, plant or weed concerns; and
- to discuss greenhouse crop assessment.

The assessment criteria designed for this project were presented and reviewed with WCA Staff. An explanation was provided to indicate how these criteria would be applied in the field and ultimately how the information gathered by this method would then be collated,

presented to indicate the condition of landscape components, and accompanied by an estimate of cost to accomplish rehabilitation observed necessary by the Assessment.

The Consulting Team met with WCA personnel in charge of irrigation in each of the five maintenance areas. Available mapping of the existing irrigation components was reviewed at the meeting and irrigation types were provided by WCA personnel and roughly mapped out. Information provided by WCA personnel included primary pipe types, irrigation head types, valve types, water source, pump location and other features unique to each area.

WCA staff also initially identified concerns about their present irrigation system, the maintenance costs of shrub beds and problems of invasive plant species in naturalized landscapes. In addition WCA staff asked that the assessment project consider the general condition of the Centre's tree population and that a specific assessment be carried out on the Wascana Centre Greenhouse crop production operation.

Once developed, the Consulting Team presented a Greenhouse Crop Production Assessment Criteria document to WCA Staff. The document was reviewed and accepted to serve as a standard by which the plant production operation at the Wascana Centre Greenhouse would be assessed.

The Consulting Team met with staff of WCA to confirm that the scope of the Landscape Assessment Project was to include the following components of the soft landscape: trees, shrubs, turf, flowerbeds, naturalized areas and natural or native stands of plant material. Walkways covered with crusher dust, loose aggregate or wood chips, and bollards throughout the Park would become part of this Assessment. The Consulting Team would also undertake an assessment of the present irrigation system employed by Wascana Centre Authority. The Assessment Project would apply to all lands within the jurisdiction of the Authority.

2.1.4 DEMONSTRATION

Data collection began with a demonstration of the landscape assessment process in the field in Wascana Park (sub-area 1a). The demonstration was attended by the WCA Maintenance Manager and the Forestry/Horticulture Manager and key members of the Consulting Teams. During this meeting the application of the assessment criteria was applied to typical park components.

2.1.5 DATA COLLECTION

Field data was collected electronically using Trimble Juno 3Bs which are GPS-based hand held data collection units, operating ArcPad (Version 10). Each day an aerial photograph of the area to be reviewed was loaded onto the units upon which points were located. Each point automatically was given a unique ID number, a time marker, and geographic marker. Dropdown menu forms provided the framework for assessing each landscape component. At the end of each day the data was downloaded into the central

ArcGIS file. In addition to gathering specific data based on the criteria, each member of the field assessment team also made field notes to elaborate on observed problems, or detail landscape conditions for future reference, and to aid in the interpretation of the computer generated data analysis.

Three members of the Consulting Team made up the field assessment team. All landscape components within each sector were assessed at one time, within a day or two. Each field member undertook the same specific set of components in each sector to become more intimately with the assessment criteria for those specific components. This method of work assignment also provided consistent interpretation of each landscape component throughout all sectors.

The fieldwork began in early June and was completed by approximately the third week of July. Working through this part of the season provided fairly consistent plant growth conditions which in turn limited the variation within each landscape component throughout the park. The resulting data is therefore more reliable across the Centre.

2.1.6 DATA ANALYSIS

ESRI's ArcGIS 10 exposes information housed in a geo database through an Application Programming Interface (API) written in the Python Programming Language. The interaction with the geo database was easy to employ. With very little logic it was possible to extract all points for a given land area.

The presentation layer of the final report was completed using Microsoft Excel. A template file, the final look and layout of the report, which contained all the information grouped logically, was created. For every sub-area (1a, 1b, etc.) the template was filled with appropriate information, and saved with its appropriate name.

To increase the report's flexibility the reports were made reliant upon four external files: Costs, Area Information, Trees and Bollards. This allowed the costs, area sizes, tree quantities and bollard information to be changed at a later time without the need to rerun the report every time.

The report took approximately 12 minutes to compile, during which time approximately 13,400 individual assessment points were retrieved and analyzed. The processed points are then automatically entered into their appropriate Excel file report.

2.2 STRUCTURES

Each item to be structurally assessed was visually reviewed based on criteria provided in the section. Materials and measurements were noted. No destructive means of testing were performed.

2.3 ART FEATURES

Art features were visually assessed using the established criteria. Measurements of objects and damage were taken. Materials and conditions were noted. No destructive means of testing were performed.

2.4 PLAY STRUCTURES

Two play structures at Wascana Playground and Candy Cane Park were visually assessed.

3. ASSESSMENT CRITERIA

3.1 LANDSCAPE

Turf, trees, shrubs, flower / perennial beds, greenhouse crop, sports fields, naturalized areas, crusher dust and woodchip pathways, bollards and site furniture, were assessed using the following criteria.

3.1.1 TURF

- Turf health measured by taking approximately 8 samples in each sub-area. Each sample was 30cm x 30 cm (one foot square) and was taken at various locations throughout the park excluding sports fields. Turf within each sample was assessed on basis of; broadleaf weed count, density of grass growth and presence of thatch build-up.
- Ratings in this section were applied to irrigated turf only. Dryland turf was assessed under Naturalized Parks/Areas as Grass/Herbaceous Vegetation.

a. Turf Condition

Weed Count (per square foot)

<i>Good</i>	Up to 5 broadleaf weeds
<i>Fair</i>	6 to 10 broadleaf weeds
<i>Critical</i>	Over 10 broadleaf weeds

Extent of weed condition will depend on total of each rating (i.e. good, fair, critical) over the eight sample sites.

Turf Density

<i>Good</i>	Grass blades growing closely together. Individual leaves touching to appear as one ground cover. Individual leaves somewhat flat in shape and dark green in color. Difficult or impossible to see thatch or soil through turf cover without brushing leaves aside.
<i>Fair</i>	Grass blades not growing closely together. Individual leaves somewhat flat in shape and dark green in color. Individual leaves may not be touching and thatch or soil can be seen through turf cover without brushing leaves aside.
<i>Poor</i>	Grass blades sparse and can be seen as individual leaves. Individual leaves thin and needle like in shape and light green in color. Individual leaves are not touching and thatch or soil can be seen over most of sample area.

Turf density will depend on total of each rating (i.e. good, fair, critical) over the eight sample sites.

Thatch

<i>Good</i>	Thatch is visible but cannot be accumulated by digging fingers into thatch and pulling in a raking manner. Thatch cover may be thin and compressed or thatch accumulation may be low.
<i>Poor</i>	Thatch can be accumulated by digging fingers into thatch cover and pulling in a raking manner. Accumulation of dead plant material predominantly grass clippings shows thatch build-up excessive.
<i>Critical</i>	Thatch is not evident. Turf may be worn and soil may be compacted. or Thatch can be readily accumulated by digging fingers into thatch cover and pulling in a raking manner. Difficult to reach soil surface by digging through thatch build-up.

Thatch condition will depend on total of each rating (i.e. good, fair, critical) over the eight sample sites.

b. Turf Problems

Grading

Sites demonstrating visible ponding problems were categorized as:

- conditions negatively affecting plant growth (water logged soil),
- or**
- conditions posing a safety hazard to park users (holes that would cause injury to pedestrians).

The locations will be captured on GPS and extent of problem indicated as:

- less than one meter in radius from point
- over one metre but not more than 5 metres in radius from point or if linear configuration, extending 2.5 metres from centre point of problem area.\
- over 5 metres up to 20 metres in radius or more likely if in linear configuration, extending equidistantly from centre point of problem area

Irrigation

Sites demonstrating visible irrigation problems such as broken sprinkler head, dry areas of turf indicating poor coverage, or excessively wet areas where drainage and grading not a problem. These sites were captured on GPS and extent rating was:

- irrigation head damaged
- dry turf area indicating poor irrigation coverage
- excessive moisture where grading is not a contributing factor

Turf Wear Patterns

Sites that demonstrate excessive pedestrian wear by worn pathways, compacted soil and grade depressions along path of traffic. The locations were captured on GPS and extent of problem indicated as:

- less than one meter in radius from point
- over one metre but not more than 5 metres in radius from point or if linear configuration, extending 2.5 metres from centre point of problem area.
- over 5 metres up to 20 metres in radius or more likely if in linear configuration, extending equidistantly from centre point of problem area

Sites that demonstrate excessive wear or damage resulting from vehicular traffic. These sites may be characterized by ruts in turf, damaged shrubs or trees or compacted pathways where turf had begun to die or was dead. The locations were captured on GPS and extent of problem indicated as:

- less than one meter in radius from point
- Over one metre but not more than 5 metres in radius from point or if linear configuration, extending 2.5 m from centre point of problem area.
- Over 5m up to 20m in radius or more likely if in linear configuration, extending equidistantly from centre point of problem area

3.1.2 TREES

a. General Tree Health

The tree canopy is a reliable indicator of the health of a tree or group of trees. The percentage of tree canopy diseased, dying or dead is used to indicate the level of health in the canopy. Information was recorded on a grouping of trees in tree bed or linear extension of trees by the area covered. All trees in the area will be assessed.

<i>Good</i>	10% or less disease or dieback in tree or tree canopy
<i>Fair</i>	10 to 25 % disease or dieback in tree or tree canopy
<i>Poor</i>	25 to 50% disease or dieback in tree or tree canopy
<i>Critical</i>	Greater than 50% disease or dieback in tree or tree canopy

b. Tree Problems

Indication of visible physical damage to trunks or root systems of trees in the park will be rated by identifying the location using GPS and describing extent of damage.

Trunk Damage

<i>Fair</i>	Bark broken but cambium layer not exposed.
<i>Poor</i>	Bark broken and cambium layer of wood exposed over small area not more than 100mm square.

Critical Bark broken and cambium layer of wood exposed nearly or completely around trunk of tree.

Root Damage

Indication of visible physical damage to tree roots to be rated by identifying the location using GPS and describing the nature of damage by the extent rating

Fair Roots shallow and exposed resulting in damage to roots.

Poor Roots exposed and damaged in cultivated areas.

Critical Roots exposed and damaged by excavation.

c. Urban Forest Perspective

A measure of health of tree population (urban forest) is indicated by diversity of tree species present, and the age distribution of trees within the forest. The assessment also acknowledged that the urban forest is a designed and ‘built’ landscape. Thus consideration must be given to the designer’s intention to create a certain context for park users by repeated or intentional use of similar species, or tree size, shape, texture or color. These design parameters will not always conform to aspects of a natural or naturalized forest. Assessment of the health of such an arrangement of trees must therefore become somewhat subjective supported by a sound understanding of good arboricultural practices.

3.1.3 SHRUBS

a. General Condition

Percentage of shrubs diseased, dying or dead was assessed by shrub bed. These were identified by GPS and rate condition of shrubs in each bed according to the following categories:

Good Plants require thinning out because branching too dense restricting light from entering interior of plant. Little or no leaf development except on outside of plant. 25% or less disease or dieback.

Fair Plants require heading back and thinning because branching very dense, evidence of sucker growth, branches may be weak. Over 25% but less than 50 % disease or dieback.

Critical Plants show excessive sucker growth, evidence of root rot or weak wood at ground level, numerous tall and leggy branches of old wood. Greater than 50% disease or dieback.

b. Density of Shrub Beds

Fair Canopy cover thin (can walk through without difficulty however branches close together with few holes).

<i>Poor</i>	No canopy present however individual plants are healthy and spaced on uniform and regular spacing (easy to walk through however plants present on uniform and regular spacing).
<i>Critical</i>	No canopy present and individual plants in poor health, weak annual growth, irregular plant spacing.

c. Weed Growth

<i>Moderate</i>	Average five to 10 weeds/square metre
<i>Heavy</i>	Average over 10 weeds/square metre

d. Mulch

Wood bark or wood shavings mulch may be used as a ground cover to conserve moisture and suppress weeds in shrub beds. WCA maintenance may elect to use mulch fairly extensively or sparingly in different areas. The assessment will rate the effectiveness of mulch where it is present. In planting beds, which are not mulched the assessment will provide cultural recommendations based on site and plant condition observations.

<i>Heavy</i>	Mulch relatively new between 50 and 100 mm thick, showing little or no contamination with weeds (average one to five weeds/square metre), soil or other plant material such as grass clippings.
<i>Insufficient</i>	Mulch grey in color and mulch fibres somewhat decayed and not distinct, between 10 and 25 mm thick but not showing soil through mulch yet, contamination with soil and/or other dead plant material.
<i>Critical</i>	Soil visible through mulch or mulch non-existent.

e. Impact of Shrubs in Parks

The use of shrub material in parks creates interest in the landscape, provides visual and physical screening and integrates structures into the landscape. Shrub populations in different parks may provide different impacts. The effectiveness of a shrub or shrub bed also depends on the health of the plant material as a function of growing conditions. The assessment recognized design intent as well as plant health in consideration of appropriateness of certain species for existent growing conditions. At sites where plant health problems were critical, recommendations were made based on a subjective interpretation of design and objective assessment of plant condition.

3.1.4 FLOWER / PERENNIAL BEDS

Annual and perennial flowerbeds were rated using the following system of criteria.

a. Soil Condition

Flowerbed soil sample was taken by removing a small divot of soil with a trowel. Soil sample should be between 45 and 75mm in diameter and between 75 and 100mm deep.

One sample was taken in every 10 square metres of bed. Plant material was not damaged when taking the sample.

<i>Very good</i>	Soil falls away from the trowel and readily falls apart after removal from the bed. Visual inspection reveals a dispersal of identifiable organic matter as a component of the sample. Soil does not stay in a ball when compressed in the palm of your hand when released.
<i>Fair</i>	Soil clings to trowel although some portion drops away after removal from the bed. Visual inspection reveals some identifiable organic matter however this is a small component of the sample to make up less than 10% of sample. Soil stays in a ball when compressed in the palm of your hand but shows signs of cracking apart or falls apart in large pieces when released.
<i>Poor</i>	Soil clings to trowel although with few or no portion dropping away after removal from the bed. Visual inspection reveals no identifiable organic matter. Soil stays in a ball when compressed in the palm of your hand and shows no signs of cracking apart or falling apart when released.

b. Edging

Inspected to determine that edging was straight and forms a crisp line between soil in bed and turf or other material surrounding the bed. Where no edging structure was present by design the assessment will consider the condition and effectiveness of the line designating the bed.

<i>Good</i>	Line formed by the edging is straight (to be determined visually) and provides a clean crisp distinction between soil in bed and surrounding material (usually turf).
<i>Fair</i>	Line formed by the edging is not straight but deviates not more than 50mm from a straight line in any 3 metre length (to be determined visually) Edging provides a separation between soil in bed and surrounding material (usually turf) but is not crisp nor distinct.
<i>Critical</i>	Line formed by the edging is not straight or undistinguishable. Edging fails to provide a separation between soil in bed and surrounding material (usually turf).

c. Weed Population

Weeds in the beds might be expected especially early in the annual flower bed season (i.e. month of June)

<i>Good</i>	Weed population in month of June or earlier should be 10 or fewer plants in any 25 square cm area. Weed population in months of July or August should be 5 plants or fewer in any 25 square cm area. Three samples to be taken per 10 square metres of bed
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<i>Fair</i>	Weed population in month of June or earlier should be between 10 and 20 plants in any 25 square cm area. Weed population in months of July or August should be 10 plants or fewer in any 25 square cm area. Three samples to be taken per 10 square metres of bed
<i>Critical</i>	Weed population in month of June or earlier is greater than 20 plants in any 25 square cm area. Weed population in months of July or August is greater than 10 plants in any 25 square cm area. Three samples to be taken per 10 square metres of bed.

d. Effectiveness of Design

Effectiveness of flowers/perennial beds is a subjective consideration based on size of bed as a function of size of park, location in the park, the spacing of plants within the bed, the variety of species used in the bed and how that variety impacts the range of colour display throughout the season.

3.1.5 GREENHOUSE CROP

The Greenhouse Crop Assessment process followed the points of inquiry outlined below. The observations and information collected along these avenues of inquiry were collated into a subjective assessment report.

a. Ground History

The purpose of the greenhouse operation, its mandate and objectives over the past 5 years and into the near future (next 5 years), provides the basis for review of the operation and the parameters for crop assessment.

<i>Good</i>	A consistent pattern of crop production and production practices over the last five years indicating stability in the operation and direction given to the Greenhouse operators
<i>Fair</i>	Deviation of crop size and crop variety in response to changing directions and objectives set out for the greenhouse operation.
<i>Concern</i>	Changes in crop size and crop variety from year to year where 'bench space' is left empty through a production year or crop variety changes for example from perennial indoor plants to bedding plants within a 5 year time line without a consistent pattern.

b. Greenhouse Crop Production

A greenhouse is a building constructed of glass or plastic for the cultivation of plants under controlled environmental conditions. The key operational components of a controlled plant growth environment are:

- Temperature, light and air control
- Growing media and nutrient control
- Irrigation

- Pest and foreign materials control
- Cultural practices applicable to specific crops

Temperature, air control and light assessment considered the safe and effective function of greenhouse operation components such as heat source, ventilating mechanisms, and light sources. The availability of light as a function of glazing used on the greenhouse and/or effectiveness of artificial light. This does not attempt to assess the mechanical, electrical or structural building components beyond observing that they 'do' or 'do not' support the effective function of the crop production operation.

Growing media and nutrient control reviewed the use of soil amendments and fertilizer in the crop production program. Points of inquiry will be:

- To what extent is the use of fertilizers determined by soil analysis, plant growth symptoms, plant species, and crop production objectives (i.e. expected size of annual at point of planting outdoors)?
- What is the method of applying fertilizers to the crop?
- Is growing media a combination of soil and soil amendments or is a soil-less mix used? If soil amendments are used what are they? If soil is used what is the source of material?
- Is any greenhouse refuse being composted and subsequently re-introduced to the growing operation?

Irrigation methods used in the production of the various crops were considered in view of their effectiveness and efficiency to provide water to living plant material. Use of hydroponics and automated irrigating systems are generally preferred over manual application of water.

Control of insect pests, diseases and foreign materials including weeds in the Greenhouse operation is a large factor in effective and efficient crop production.

- Are integrated pest management practices such as use of predatory insects, plant hygiene and selective chemical controls being applied?
- What pesticides are being used and what records are kept documenting use?
- What precautions are in place to secure plants and protect staff and public?
- Is there evidence of insect or disease damage on greenhouse plants? To what extent are these symptoms prevalent throughout the greenhouse?
- To what extent is there evidence of weed growth or infestation? Does the production program include weed control even if that is just the passive removal of unwanted plant species and plant debris from the inside growing area and the outdoor greenhouse environment?

Specific greenhouse crops require certain cultural practices intended to address the various growth needs of the crop plants. Cultural practices such as seeding dates, transplanting or potting, plant spacing, pruning, and harvesting or shipping of plant products were considered. Consideration was given to the efficient and effective application of cultural practices in crop production.

3.1.6 SPORTS FIELDS

Sports fields were assessed separately as Soccer/Football fields and Ball diamonds.
Rating criteria considered: high traffic areas such as goal areas, centre fields, aggregate (skinned) infield surfaces and overall turf condition.

SOCCER/FOOTBALL

Goal Areas – Turf Quality

<i>Good</i>	Grass blades growing closely together. Individual leaves touching to appear as one ground cover. Individual leaves somewhat flat in shape and dark green in color. Difficult or impossible to see thatch or soil through turf cover without brushing leaves aside. Little or no depression at goal line.
<i>Fair</i>	Grass blades not growing closely together. Areas of soil showing through grass cover however turf growing over at least 50% of goal mouth.
<i>Poor</i>	Grass blades sparse or non-existent at goal mouth. Soil appears compacted and forms depression at goal line.

Centre Field – Turf Quality

<i>Good</i>	Grass blades growing closely together. Individual leaves touching to appear as one ground cover. Individual leaves somewhat flat in shape and dark green in color. Difficult or impossible to see thatch or soil through turf cover without brushing leaves aside.
<i>Fair</i>	Grass blades not growing closely together. Soil surface showing through grass cover however turf growing over at least 50% of area within 5m radius of centre field.
<i>Poor</i>	Grass blades sparse or non-existent. Soil surface appears compacted and shows evidence of pedestrian traffic such as soil divots, or cleat impressions. Turf growing over less than 50% of area within a 5m radius of centre field.

a. Overall Turf Condition

Turf quality outside goal and centre field area based on four samples taken outside these two areas along a diagonal line from opposite corners of the field.

Weed Count (per square foot)

<i>Good</i>	Up to 5 broadleaf weeds
<i>Fair</i>	6 to 10 broadleaf weeds
<i>Critical</i>	Over 10 broadleaf weeds per square foot

Extent of weed condition will depend on total of each rating (i.e. good, fair, critical) at the four sample sites.

b. Turf density

<i>Good</i>	Grass blades growing closely together. Individual leaves touching to appear as one ground cover. Individual leaves somewhat flat in shape and dark green in color. Difficult or impossible to see thatch or soil through turf cover without brushing leaves aside.
<i>Fair</i>	Grass blades not growing closely together. Individual leaves somewhat flat in shape and dark green in color. Individual leaves may not be touching and thatch or soil can be seen through turf cover without brushing leaves aside.
<i>Poor</i>	Grass blades sparse and can be seen as individual leaves. Individual leaves thin and needle like in shape and light green in color. Individual leaves are not touching and thatch or soil can be seen over most of sample area.

Extent of weed condition will depend on total of each rating (i.e. good, fair, critical) at the four sample sites.

c. Thatch

<i>Good</i>	Thatch is visible but cannot be accumulated by digging fingers into thatch and pulling in a raking manner. Thatch cover may be thin and compressed or thatch accumulation may be low.
<i>Poor</i>	Thatch can be accumulated by digging fingers into thatch cover and pulling in a raking manner. Accumulation of dead plant material predominantly grass clippings shows thatch build-up excessive.
<i>Critical</i>	Thatch is not evident. Turf may be worn and soil may be compacted.

Extent of weed condition will depend on total of each rating (i.e. good, fair, critical) at the four sample sites.

d. Ground Squirrel Damage

Burrows excavated by Ground Squirrels in athletic fields creates a serious hazard to park users. Park audit included a visual assessment of the extent of burrows found on or around sports fields.

<i>Fair</i>	Burrows present however, only outside the playing surface of the sports field.
<i>Critical</i>	Burrows present on the playing surface of the sport field.

e. Grading Problems

Sites demonstrating visible ponding problems were captured on GPS and extent indicated as:

- less than one meter in radius from point
- Over one metre but not more than 5 metres in radius from point or if linear configuration, extending 2.5 metres from centre point of problem area.
- Over 5 metres up to 20 metres in radius or more likely if in linear configuration, extending equidistantly from centre point of problem area

f. Irrigation Problems

Sites demonstrating visible irrigation problems such as broken sprinkler head, dry areas of turf indicating poor coverage, or excessively wet areas where drainage and grading not a problem. These sites were captured on GPS and extent rating should be:

- irrigation head damaged
- dry turf area indicating poor irrigation coverage
- excessive moisture where grading is not a contributing factor

BALL DIAMONDS

a. Infield Condition (aggregate/skinned infield)

<i>Layout</i>	Layout of infield area compared to the preferred design layout. This will be a visual assessment to determine if the layout on site conforms to the preferred layout or not.
<i>Weed Growth</i>	Weed growth in the infield is an indication of lack of grooming, and/or a playing surface material high in soil content. This will be a visual assessment to determine if weed growth is present or not.

b. Surfacing Material

<i>Good</i>	Shale used as surfacing
<i>Fair</i>	Screened aggregate/sand/soil mix
<i>Poor</i>	Predominantly soil with some sand or aggregate

c. Grading

<i>Good</i>	Grade is uniform throughout infield with evidence of recent mechanical scarification.
<i>Fair</i>	Grade is uniform except for depressions along running lanes between bases and in the batter's box and catcher's area. Evidence of recent mechanical scarification.
<i>Poor</i>	Grade is uneven throughout infields with depressions along running lanes, between bases and in batter's box and catcher's area deep enough to

collect and retain water from irrigation or rain. No evidence of recent mechanical scarification.

d. Outfield Condition (turf outfield)

Turf condition - Turf condition is determined by assessing three samples in outfield. One approximately 5 metres behind first base, one approximately 5 metres behind second base and one approximately 5 metres behind third base

e. Weed Count (per square foot)

<i>Good</i>	up to 5 broadleaf weeds
<i>Fair</i>	6 to 10 broadleaf weeds
<i>Critical</i>	Over 10 broadleaf weeds per square foot

Extent of weed condition will depend on total of each rating (i.e. good, fair, critical) at the three sample sites.

f. Turf Density

<i>Good</i>	Grass blades growing closely together. Individual leaves touching to appear as one ground cover. Individual leaves somewhat flat in shape and dark green in color. Difficult or impossible to see thatch or soil through turf cover without brushing leaves aside.
<i>Fair</i>	Grass blades not growing closely together. Individual leaves somewhat flat in shape and dark green in color. Individual leaves may not be touching and thatch or soil can be seen through turf cover without brushing leaves aside.
<i>Poor</i>	Grass blades sparse and can be seen as individual leaves. Individual leaves thin and needle like in shape and light green in color. Individual leaves are not touching and thatch or soil can be seen over most of sample area.

Turf density will depend on total of each rating (i.e. good, fair, critical) at the three sample sites.

g. Thatch

<i>Good</i>	Thatch is visible but cannot be accumulated by digging fingers into thatch and pulling in a raking manner. Thatch cover may be thin and compressed or thatch accumulation may be low.
<i>Poor</i>	Thatch can be accumulated by digging fingers into thatch cover and pulling in a raking manner. Accumulation of dead plant material predominantly grass clippings shows thatch build-up excessive.
<i>Critical</i>	Thatch is not evident. Turf may be worn and soil may be compacted.

Thatch condition will depend on total of each rating (i.e. good, fair, critical) at the three sample sites.

h. Grading Problems

Sites demonstrating visible ponding problems were captured on GPS and extent indicated as:

- Less than one meter in radius from point
- Over one metre but not more than 5 metres in radius from point or if linear configuration, extending 2.5 metres from centre point of problem area.
- Over 5 metres up to 20 metres in radius or more likely if in linear configuration, extending equidistantly from centre point of problem area

i. Irrigation Problems

Sites demonstrating visible irrigation problems such as broken sprinkler head, dry areas of turf indicating poor coverage, or excessively wet areas where drainage and grading not a problem. These sites were captured on GPS and extent rating was:

- irrigation head damaged
- dry turf area indicating poor irrigation coverage
- excessive moisture where grading is not a contributing factor

j. Ground Squirrel Damage

Burrows excavated by Ground Squirrels in athletic fields create a serious hazard to park users. Park audit included a visual assessment of the extent of burrows found on or around sports fields.

Fair Burrows present however, only outside the playing surface of the sports field.

Critical Burrows present on the playing surface of the sports field.

3.1.7 NATURALIZED AREAS

GRASS/HERBACEOUS VEGETATION

a. Ground Cover - continuity of vegetative ground cover

Good Grass and or herbaceous plant material provide uniform and dense cover over soil. No areas of bare soil greater than one 150mm in diameter.

Fair Grass and or herbaceous plant material provide thin cover over soil. Small patches (approximately 300mm in diameter) appear scattered throughout landscape but not consistently.

Poor Grass and or herbaceous plant material provide sparse cover over soil. Small patches (greater than 300mm in diameter) appear regularly throughout landscape.

b. Plant Species - uniformity of plant species

<i>Good</i>	The same grass/herbaceous plant species occur throughout site. Little or no species deviation from design intent. Few invasive weed species such as Canada thistle or dandelions apparent.
<i>Fair</i>	An unintended variety of grass/herbaceous plant species occur throughout site. Two or three different species apparent which do not conform to design intent. Invasive weed species such as Canada thistle or dandelions colonizing and crowding out desired plants in some areas.
<i>Poor</i>	Various grass/herbaceous plant species occur throughout site all deviating from design intent. Invasive weed species such as Canada thistle or dandelions colonizing and crowding out desired plants in numerous large areas greater than 2m in diameter.

TREES AND SHRUBS

a. Plant Species Variety- evidence of plant species from designed plant list

<i>Good</i>	All species from plant list evident and growing
<i>Fair</i>	Only approximately 50% of species from plant list evident and growing
<i>Poor</i>	Less than 25% of species from plant list evident and growing

b. Extent of Species - evidence of expansion of species populations through natural means of propagation (i.e. suckering, stooling, seeding, layering)

<i>Good</i>	All species from plant list displaying natural propagation by at least one instance in each planting bed.
<i>Fair</i>	Only approximately 50% of species from plant list displaying natural propagation by at least one instance in each planting bed.
<i>Poor</i>	Less than 25% of species from plant list displaying natural propagation by at least one instance in each planting bed.

NATIVE PLANT STANDS

Areas of native plant stands were identified by GPS and assessment was made regarding: amount of deadfall, amount of re-growth evident, amount of invasive weed species. Each was qualified by extent with a written summary where appropriate.

a. Deadfall - Deadfall consisting of branches and limbs over 50mm in diameter hanging or leaning on adjacent plant material to cause hazard to park users.

Extent:

- *non apparent*
- *isolated locations*
- *numerous and prevalent throughout area*

b. Re-growth - Amount of re-growth of native plant species.

Extent: - *limited and hard to locate*
 - *evident through approximately 50% of area*
 - *numerous and prevalent throughout area*

c. Weed Infestation - Amount of invasive weed species such as Canada thistle, dandelions, brome grass or others.

Extent: - *limited and in small areas less than 1m in diameter*
 - *limited but in larger areas greater than 1m in diameter*
 - *evident throughout area and/or in several large areas greater than 1m in diameter.*

3.1.8 CRUSHER DUST / WOOD CHIP PATHWAYS

Common problems with pathway surfacing material will affect the ease of walking, running or cycling on the loose surface. Problems to be considered were areas of erosion, sudden depressions in the surface or contamination of surfacing material. A pathway in good condition will be level and texture of aggregate will be uniform. There will be no stones present in the surfacing and the aggregate will be free of soil contamination. There should be no weeds growing in the surface of the pathway. The edge of the pathway will be fairly distinct with little or no plant intrusion onto the pathway surface. Where the pathway surface material is a fine granular material commonly known as crusher dust or similar inert material the above criteria will apply. Where the pathway surface material consists of wood chips or wood bark material the above criteria will also apply. In addition the condition of wood chip or wood bark surface material was assessed on depth of material over the soil base. Pathways were then be rated according to the criteria below. The extent of the problem will then be described in terms of; less than 1m, 1m to 5m in diameter or linear distance, 6 to 20 metres in linear distance, or 20 to 100 metres in linear distance. In all cases the GPS reference point will be in the approximate centre of the problem.

a. Surface Condition (crusher dust and wood chips)

Fair Surface of pathway may show some uneven areas due to erosion or tire track impressions from heavy equipment. Depressions or areas of unevenness do not deviate from the general surface any more than 10mm. The texture of aggregate is uniform. There are no small stones present in the surfacing and the aggregate is free of soil contamination. There are some weeds growing only at the edge of the pathway. The edge of the pathway is not distinct with some plant intrusion onto the pathway surface.

Poor Surface of pathway may show some uneven areas due to erosion or tire track impressions from heavy equipment. Depressions or areas of unevenness may deviate from the general surface by more than 10mm. The texture of aggregate is not uniform. There may be small stones present in the surfacing and the aggregate shows signs of soil contamination where soil has been washed, blown or thrown onto the

pathway surface. There are weeds growing at the edge and through the center of the pathway. The edge of the pathway is not distinct with repeated areas of plant intrusion onto the pathway surface.

b. Wood Chip Condition (wood chips or wood bark only)

<i>Good</i>	Wood chips relatively new between 25 and 50 mm thick, showing little or no contamination with soil or other inert material
<i>Fair</i>	Wood chips grey or black in color and wood fibres somewhat decayed and not distinct, between 10 and 25 mm thick but not showing soil through surfacing yet.
<i>Critical</i>	Soil visible through wood chip surfacing or wood chips non-existent.

3.1.9 BOLLARDS

Bollards in parks will include permanent or semi permanent vertical wooden, concrete or metal posts used for the purpose of restricting vehicle/motorized traffic from accessing park property. The problems whether they are single bollards or several units were located by GPS and then described by extent. A single bollard was identified in the less than 5 metres category of extent.

<i>Fair</i>	Bollards are vertical and secure in soil but may be damaged. Where bollards form a line or curve all units conform to intended design alignment however some units are missing from the intended sequence or spacing (no two adjacent bollards in a sequence are missing).
<i>Critical</i>	Bollards are not vertical, are loose or show sign of rot at ground level. Where bollards form a line or curve not all units conform to intended design alignment and/or some units are missing from the intended sequence or spacing (two or more adjacent bollards in a sequence are missing). Bollards are ineffective in deterring vehicle access.

a. Effectiveness of Barrier

Assessment of parks will include an evaluation of the impact bollards have on the traffic in the park. Typically bollards are installed to prevent unwanted or unauthorized vehicles from entering the park. In some instances placement of bollards does prevent park access by vehicles; however, in some instances either by location, alignment or the absence of these barriers results in damage to park property. Locations where bollards are not effective as barriers, or where a barrier should be installed, were located on GPS. An assessment to briefly describe the problem, the extent of damage to the park and a possible solution was included in the park notes where appropriate.

3.1.10 SITE FURNITURE

Furniture, including benches, picnic tables, trash containers, BBQ units and information kiosks, were assessed using criteria developed for each of their component materials: concrete, wood and metal.

a. Concrete

<i>Good</i>	No repair required. New or near new condition: May be some cracks in concrete bench or table pedestals or waste container or barbecue unit. No material missing from cracked area. There are no chips or flakes of concrete missing from the units. There is no vandalism evident.
<i>Fair</i>	Repair/replacement required in 5 Years. One or more cracks evident in concrete bench or table pedestals or waste container or barbecue unit. Concrete and aggregate material is missing from one or more cracks. Corners of components may be chipped or flaked away where concrete and aggregate is missing. Evidence of vandalism such as spray paint anywhere on components.
<i>Poor</i>	Replace. Cracks or flakes of concrete missing exposing reinforcement rod. Strength and safety of components has been compromised. Immediate replace required.

b. Wood

<i>Good</i>	No repair required. New or near new condition: wood planking is solid with no indication of rot or delamination or cracking of planking. Wood stain sealant is not flaking, discoloring or wearing away at any point. No evidence of vandalism such as wood carving spray painting or scratches on surfaces. Units need not be replaced
<i>Fair</i>	Repair within 5 years. Aged and slightly damaged: wood planking shows signs of cracking or delamination although the cracks or separations are not more than 5mm in depth. End grain of planking is showing checking and grain separation however the checks are not deeper than 2 or 3mm. Wood stain is faded, peeling or wearing on flat top surface. Some evidence of vandalism such as wood carving in not more than 6 places on any one plank and no incident of vandalism covers an area greater than 100mm square. No more than two incidents of painting evident and no instance of painting vandalism covers an area greater than 150mm square. Units need not be replaced however, should be refinished.
<i>Poor</i>	Repair within 1 year. Repair Required: Cracks or delamination in planks are between 5mm and 15mm in depth. Cracks extend beyond 100mm in length and cracks or separation is evident in more than 4 locations on any one plank. End grain of planking is showing checking and grain separation extends from top to bottom surface of plank along the end of the plank. Wood is still solid with no evidence of rot in any part of the plank. Wood stain is faded or worn completely away and wood is starting

to age and discolor turning grey or black. More than six incidents of vandalism on any one plank all or any of which are greater than 100mm square.

Critical Replacement required. Replacement Required: Cracks or delamination in planks are greater than 15mm in depth and extend beyond 100mm in length. Separation of wood in cracks is 5mm or greater in width and rotten or soft wood can be found in any of these cracks or pieces of wood are missing from the plank. End grain cracks are showing separation from top to bottom surface and into the end wood by over 20mm in depth. End grain may be showing rot and parts of the wood may be missing.

c. Metal

Good Barbecue may be blackened with soot but show no sign of being bent, or warped or damaged by vandalism. Grill is flat and is not missing any rods. Grill spins freely on vertical spindle. Garbage bag retainer rings are functional. Kiosk top is not bent and securely attached.

Fair Repair required. Barbecue may be bent or warped in places but shows no holes in the top where briquettes are held or in ash drawer. Grill maybe somewhat bent or warped but still spins freely on spindle. Garbage bag retainer rings are functional. Kiosk top is bent or loose; may have graffiti.

Poor Replacement required. Barbecue has holes in the top where briquettes are held or in ash drawer or ash drawer is missing. Grill is bent or warped so that it spins only with an effort. Garbage bag retainer rings are not functional. Kiosk top is dented or steel is broken. Metal is gouged.

3.2 STRUCTURES

The following criteria provide a framework for the assessment of the selected structures.

Structural integrity Looking at the overall performance of the structure and assessing if there is a risk of failure

Durability The long-term ability of the structure to endure changing environmental and physical conditions

Serviceability The structure's ability to perform without causing bystanders or occupants discomfort. For example, the structure should not be leaning or deflecting.

The following monuments, structures and art features were assessed. Locations are noted on Drawing L.1.

Item	Identification Number
Haultain, Ross, Darin & Dunning Monument	1
Speaker's Corner	2
Regina Boat Club Monument	3

Wascana Playground	4
Oskana	5
Lady Slipper Courtyard Structures	6
Saskatchewan War Memorial	7
Saluting Monument	8
Ross Thatcher Monument	9
Lakeshore Park Totem Pole	10
Boy Scout Monument	11
Surveyor's Monument	12
Candy Cane Park Structures	13
Sculpture Four Seasons	14
Waterfowl Park Display Ponds	15
Ducks Unlimited Monument	16
Mind's Garden	17
Structures Sculpture Firehouse Elements	18

3.3 ART FEATURES

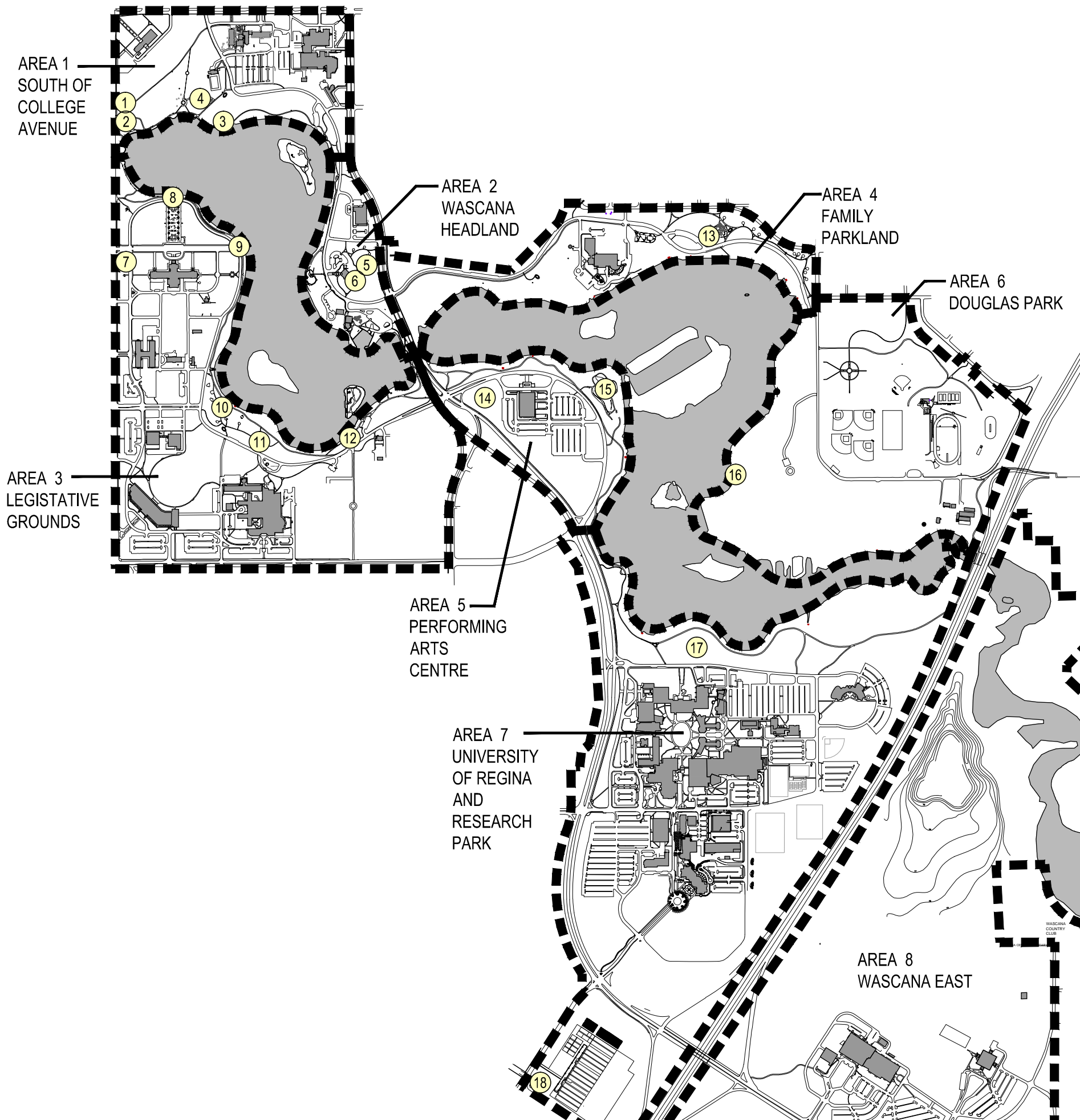
The physical condition of the art features were assessed for corrosion, paint condition, weld strength, organic buildup (excretions), scratches, gouges, dents, rust (where not intended), grout soundness and graffiti.

The following art features were assessed:

Item	Identification Number
Oskana	5
Lakeshore Park Totem Pole	10
Boy Scout Monument	11
Four Seasons	14
Mind's Garden	17
Firehouse Elements	18

3.4 PLAY STRUCTURES

Play structures were assessed at Candy Cane Park and Wascana Playground in relation to the most recent version of the Canadian Standards Association safety standards for "Children's playspaces and equipment" (CAN/CSA-Z614-07).



- 1 - Haultain, Ross, Davin and Dunning Monument
- 2 - Speakers Corner
- 3 - Regina Boat Club Monument
- 4 - Wascana Playground
- 5 - "Oskana" - Sculpture
- 6 - Lady Slipper Courtyard Structures
- 7 - Saskatchewan War Memorial
- 8 - Saluting Monument
- 9 - Ross Thatcher Memorial
- 10 - Lakeshore Park Totem Pole
- 11 - Boy Scout Monument
- 12 - Surveyor's Monument
- 13 - Candy Cane Park Structures
- 14 - "Four Seasons" - Sculpture
- 15 - Waterfowl Park Display Ponds
- 16 - Ducks Unlimited Monument
- 17 - "Mind's Garden" - Sculpture
- 18 - "Firehouse Element"

General Notes



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LANDSCAPE ASSESSMENT

Project Title

MONUMENTS, STRUCTURES AND ART FEATURES

Drawing Title

Drawn AA Checked LS

Scale 1:150000 Date 2012/08/23

Project No. 12.026R Drawing L.1

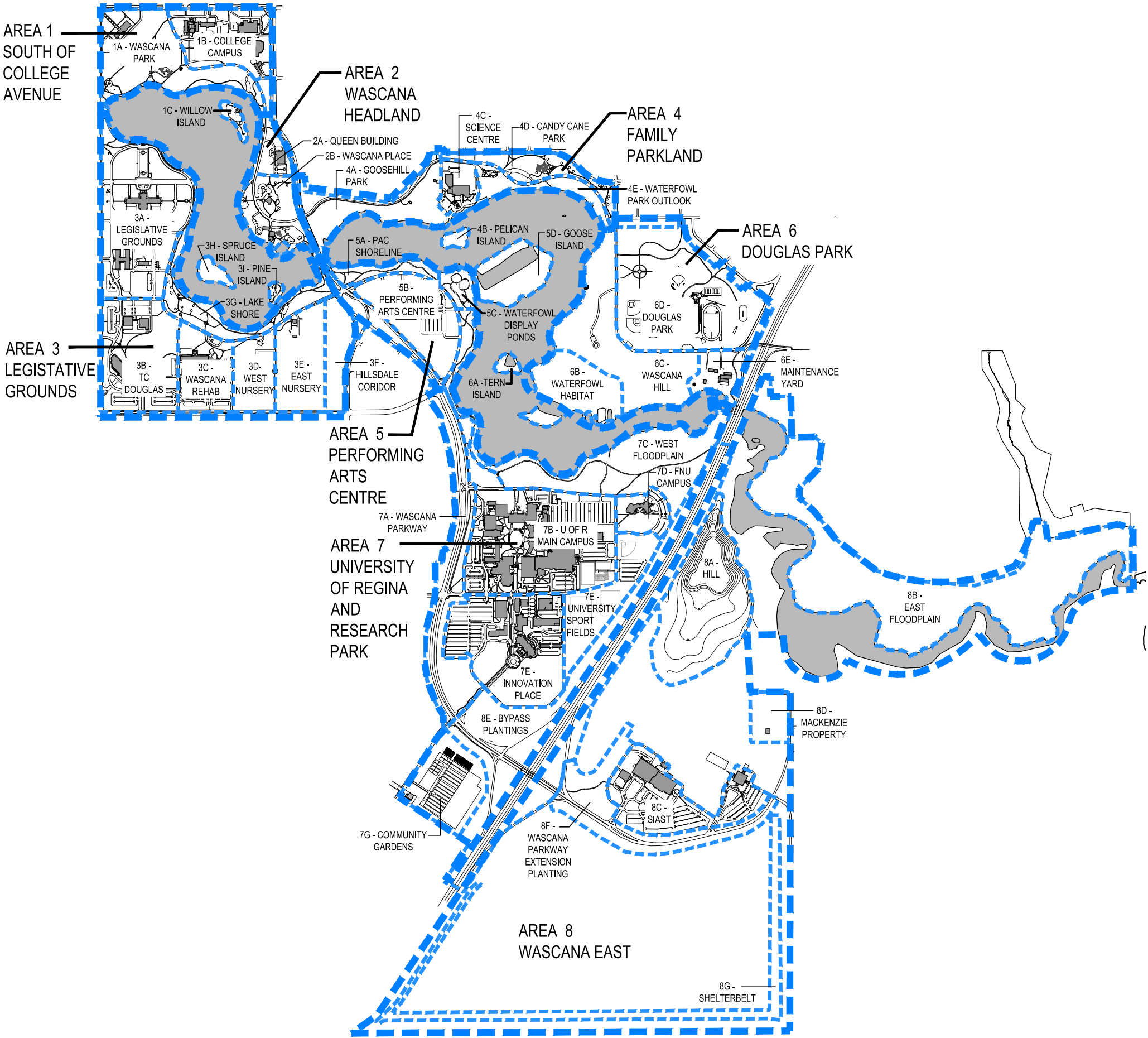
4. ASSESSMENT

4.1 AREA LIST & MAP

Area #	Master Plan Area	Sub-Area	Sub-Area Name
1	South of College Ave	A	Wascana Park
		B	College Campus
		C	Willow Island
2	Wascana Headland	A	Queen Building
		B	Wascana Place
3	Legislative Grounds	A	Legislative Grounds
		B	TC Douglas
		C	Wascana Rehab
		D	West Nursery
		E	East Nursery
		F	Hillsdale Corridor
		G	Lake Shore
		H	Spruce Island
		I	Pine Island
4	Family Parkland	A	Goosehill Park
		B	Pelican Island
		C	Science Centre
		D	Candy Cane Park
		E	Waterfowl Park Outlook
5	Performing Arts Centre	A	Performing Arts Centre Shoreline
		B	Performing Arts Centre
		C	Waterfowl Display Ponds
		D	Goose Island
6	Douglas Park	A	Tern Island
		B	Waterfowl Habitat
		C	Wascana Hill
		D	Douglas Park
		E	Maintenance Yard
7	University of Regina & Innovation Place	A	Wascana Parkway
		B	U of R Main Campus
		C	West Floodplain
		D	First Nations University Campus
		E	Innovation Place

		F	University Sports Fields
		G	Community Gardens
8	Wascana East	A	Hill
		B	East Floodplain
		C	SIAST
		D	Mackenzie Property
		E	Bypass Planting
		F	Wascana Parkway Extension Planting
		G	Shelterbelt

Areas and sub-areas are illustrated on Drawing L.2.



General Notes

1. Existing conditions provided by Wascana Centre, Regina, SK



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LANDSCAPE ASSESSMENT

Project Title

ASSESSMENT AREAS AND SUB-AREAS

Drawing Title

Drawn	AA	Checked	LS
Scale	1:200000	Date	2012/08/23
Project No.	12.026R	Drawing	L.2

4.2 LANDSCAPE

4.2.1 TURF ANALYSIS SUMMARY & RECOMMENDATIONS

Irrigated turf makes up the majority of the manicured open spaces commonly found throughout the western sections of Wascana Centre. These turf areas provide space for people to gather and spend time in the park and are used for both relaxing and informal recreational activities. These open spaces and turf areas require regular maintenance and upkeep in order to preserve the beauty of the Centre and safety of the users.

In the areas South of College Ave the pathways are too narrow for the amount of pedestrian traffic in the park. Because of this the turf is worn along the edges of the pathways. Along the waterfront in Wascana Park, wood fiber mulch has been installed along the edge of the pathway to remedy the wear; this is only a temporary fix and does not provide a solution to the issue. In all subareas throughout the Centre where sidewalks are not provided along the roads, pedestrian wear patterns are present. This problem is demonstrated along the water's edge by the Queen Building where pedestrians have worn a path along the berm. Both along the road and water edge are ideal locations for permanent pathways in order to protect the turf and improve pedestrian circulation.

In some areas it is obvious that turf mowing is completed by two pieces of equipment with different mow heights. This is most commonly seen around tree bases and along the edges of the Wascana Parkway centre median. In the latter case, a smaller mower is used along the curb because of the uneven grades found there. A regrading of these areas to create a smooth transition from grass to curb would eliminate the need for the two pieces of equipment, and the resulting uneven mow pattern.

As the volume of park users causes damage to the turf, greater care should be taken by the WCA maintenance personnel to reduce their impact on the grass as they transport equipment throughout the Centre. The full sized staff trucks do not properly fit on the small pedestrian pathways resulting in added damage to the turf along the edges. Large maintenance vehicles should be restricted to the pathways provided for them while small utility vehicles could be used on the smaller pathways.

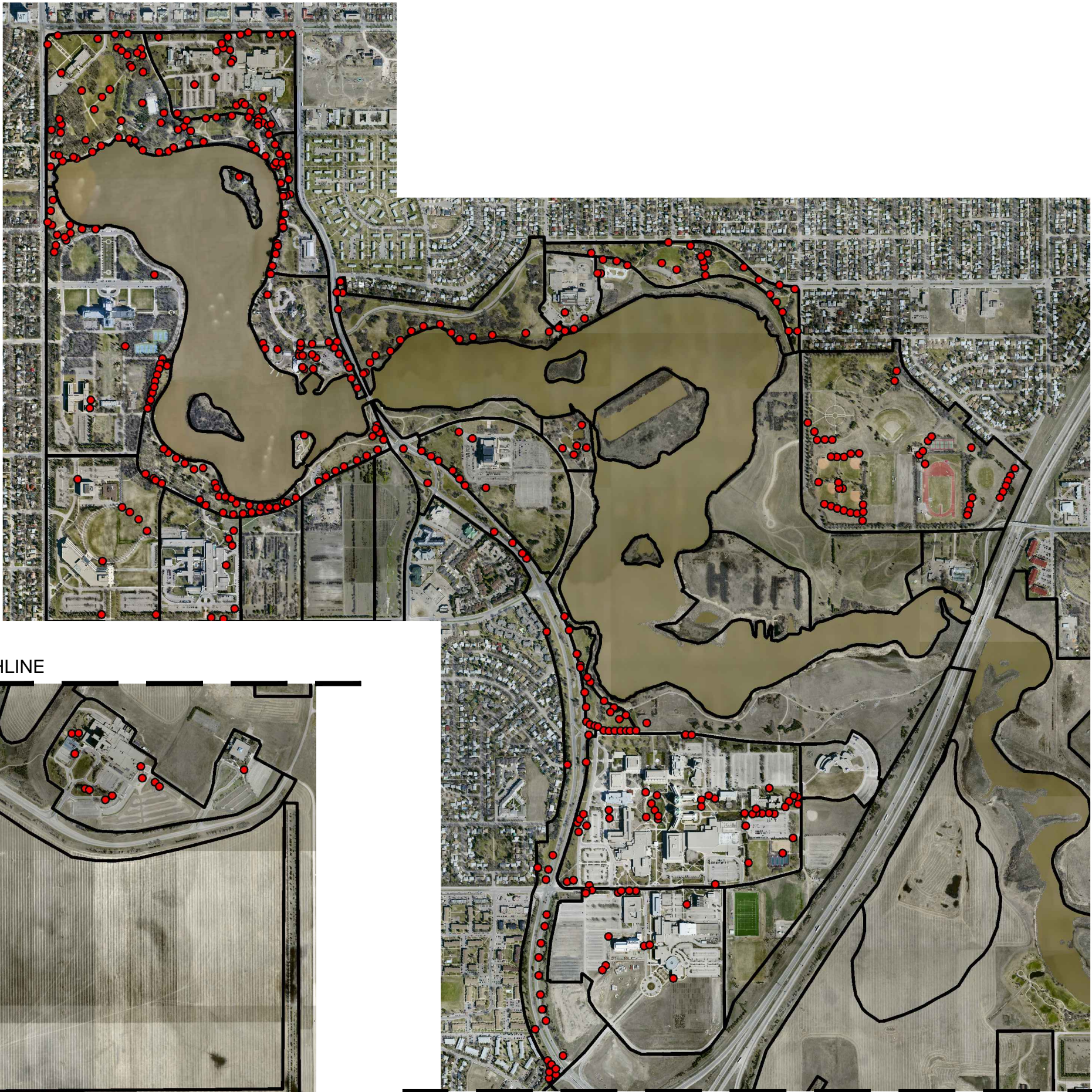
During the field assessment, large patches of exposed soil from underground construction were found in areas such as Candy Cane Park, Performing Arts Centre and T.C. Douglas building. In Candy Cane Park and at the Performing Arts Centre these patches were from recent construction but around TC Douglas the soil appears to have been there for an extended period of time resulting in an uneven surface and the growth of large weeds. Along the South shore, the geese are prevalent on many of the lawns around the Legislative Grounds and the Performing Arts Centre areas. In these areas the grass has been grazed extensively creating a very short, thin cover, resulting in no competition and weeds. In all subareas, excluding the areas South of College Ave and Wascana Headland, ground squirrel holes are abundant throughout the turf. Around the holes there is often a large pile of soil which is unsightly. By pathways and areas of high traffic, these holes

become safety hazards for the park users. (Turf that has been assessed as critical is illustrated in Drawing L.3)

Apart from combating the results of human and animal traffic, the turf areas have healthy grass and a good cover. Under groupings of trees the turf occasionally becomes patchy but this has a minor impact on the overall turf appearance. Improving and upgrading the irrigation systems throughout the Centre would regulate the moisture and appearance of the turf throughout the park.

Recommendations:

- Improve and upgrade irrigations systems throughout the Centre.
- Institute a policy of greater care by operating staff for established turf in considering the transport of equipment throughout the Centre.
- Implement a ground squirrel control program in areas of high pedestrian traffic to address public safety.
- Develop pathway system to address increased pedestrian traffic load



General Notes



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WASCANA PARK ASSESSMENT

Project Title

TURF IN CRITICAL CONDITION

Drawing Title

Drawn	AA	Checked	LS
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Scale	1:150000	Date	2012/08/23
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Project No.	12.026R	Drawing	L.3
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4.2.2 TREE ANALYSIS SUMMARY & RECOMMENDATIONS

Many of the trees, having been planted when the park was established 50 years ago, are coming to the end of their life span and require removal immediately or will require removal within the next few years. Percentages of required tree removal and required pruning have been included in each section assessment. Overall the percentages for removal are quite low with the highest numbers being at the South end of Wascana Centre especially the highways, where the percentage of tree removal is approximately 10%. Infill and replacement plantings are required as the older trees begin to die off. In a number of sites infill is already present but proper placement and species needs to be considered. Around the Legislative Grounds some current infill plantings are inappropriate for the space. In locations, pine trees have been planted underneath elm trees and as they grow will result in overcrowding and tree damage. Around the College Campus, there appears to be some disorder arising from old landscape plantings being replaced by new segments of landscape development. The result is a somewhat disjointed landscape with old and new areas standing apart from one another.

With the aging tree population the implementation of an annual tree pruning program to achieve a once in ten year tree pruning cycle throughout the Centre is required. As trees die, branches present a public safety, disease and pest concern. Tree sanitation is required to prevent disease and pests. Regular pruning will aid in the preservation of older trees and prolong the life and effectiveness of younger trees.

Numerous trees throughout the Centre have had previous pruning, some to the extent of disfiguration. When leaders or major limbs die the tree is likely to decline further. If pruned, the life of the tree may be prolonged for a short period of time major pruning cuts become avenues of disease and secondary rot to enter the tree further reducing the tree's life span.

Due to the maturity of the trees many tree beds are overcrowded. This has resulted in inner branch die back or tree loss. Around the Legislative Grounds numerous beds require thinning while others require infill planting. Overcrowded beds should be thinned to provide room for future infill planting as the trees begin to die off. At the University of Regina and the Queen building the trees are often planted too close to the buildings.

Large tree beds throughout the Centre, most commonly in the Legislative Grounds Area, are being rototilled to control weeds. An alternative ground cover should be considered for these areas, such as turf or mulch. Cultivation can cause damage to tree roots while also exposing soil, depleting it of moisture and making it susceptible to weed growth. A ground cover in these areas would control the weeds much more effectively as well as promote pedestrian use and increase usable space within Wascana lands.

Precautions should be taken when mowing turf around trees in order to prevent damage to the bark. Bark damage is also often found in the cultivated tree beds from manoeuvring the machines around the trees. Trunk guards are recommended for all trees to help prevent this damage from machinery as well as from rodents.

Other less frequent problems that were found were the appearance of spider mites in the Spruce trees along Wascana Parkway and exposed tree roots at the University of Regina. In both of these cases the trees should be monitored and pruned or removed if damage becomes evident. Exposed tree roots may also affect the maintenance of the turf or create a possible tripping hazard, if problems arise the roots should be removed. (Trees that have been assessed as critical are illustrated in Drawing L.4).

Wascana Park has an abundant amount of trees and a wide variety of species. Pruning and replacement is required throughout the entire Centre as the trees continue to age, but the large number of mature trees creates a beautiful space in the center of the city.

Recommendations:

- Institute an annual tree pruning program to achieve a once in ten year tree pruning cycle throughout the Centre for public safety, tree sanitation, preservation of older trees and prolonging the life and effectiveness of younger trees.
- Install tree guards at base of trunks of all young trees to prevent mechanical damage.
- Adopt a standard practice of maintaining a mulch cover for all tree beds throughout the entire Centre.
- Employ a long term plan to eliminate the use of rototilling as a means of weed suppression and replace cultivated areas with turf and/or shrub beds.



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WASCANA PARK
ASSESSMENT

Project Title

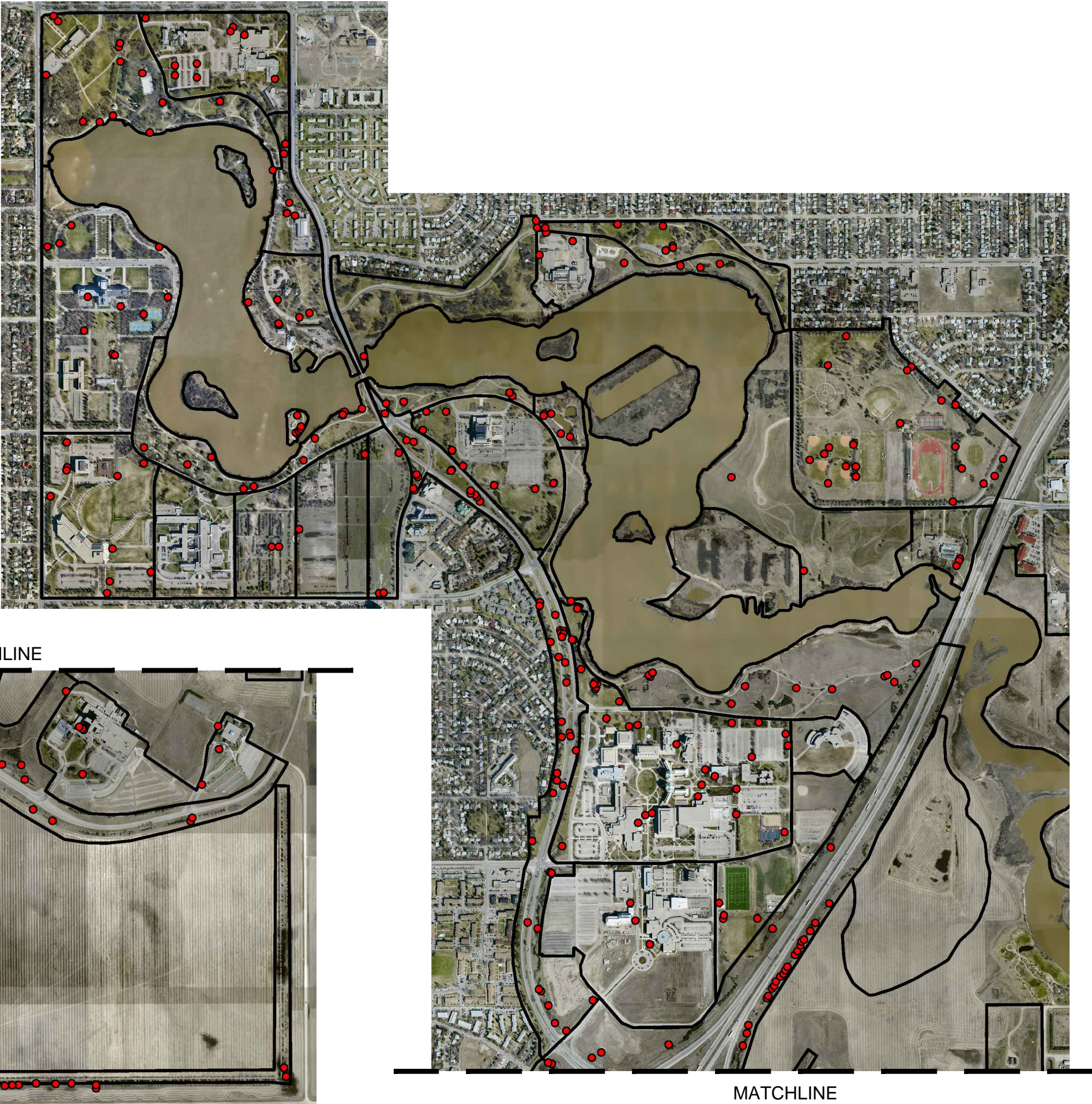
TREES IN CRITICAL
CONDITION

Drawing Title

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Project No. 12.026R Drawing L.4



4.2.3 SHRUB ANALYSIS SUMMARY & RECOMMENDATIONS

Within Wascana Centre shrubs are used as a means to create screening between the park and adjacent land uses, define gathering areas and create visual interest. Shrubs are found along building faces, at entrances, at key points of interest such as monuments, play structures, picnic areas and partnered with tree groupings. In certain areas, shrubs are planted along the perimeter of tree beds leaving void areas within tree groupings.

It appears that the quantity of shrub material exceeds the resources available for shrub maintenance. Generally, throughout Wascana Center the majority of the shrub material is overgrown and appears to be near the end of its life cycle. Based on this observation it is expected that many of the older shrub plantings will not survive into the next 50 years. Lack of pruning throughout Wascana Centre has contributed to overgrown shrub beds. Overgrown shrubs are commonly long and leggy and have little to no foliage within the interior and at the base of the shrub. Often shrubs have grown too large and exceed the edge of the shrub bed making it difficult for mowers to get close to the beds to mow.

The majority of shrub and trees beds within WCA are rototilled to control weeds while some high profile areas were noted as having wood fiber mulch. Rototilling has resulted in large expanses of exposed soil throughout all of WCA. For example, the Legislative Grounds has many of these rototilled areas that have large shade trees within and shrubs along the perimeter. These large areas for the most part are unseen and inaccessible to the public. Removal most of the perimeter shrubs in these locations is recommended to allow more light into the interior area and provide pedestrian access. Additionally, it is recommended that the exposed soil is seeded with a dryland turf mix and that low growing shrubs be used as a ground cover. We recommend this intervention to provide more usable space for park users as well as create a more diverse habitat environment for bird, animal and insect species; to reduce maintenance efforts in rototilling; and to reduce damage to tree shrub roots.

Honeysuckle, Caragana, Lilac and Cotoneaster are the dominant shrub species throughout all of Wascana Centre. If left unmaintained these shrubs grow into tree form and are consequently too large for many landscape applications. Often, limbs on these species range between 3"-6" in diameter. Commonly, these shrub plantings are overgrown and no longer function effectively due to the lack of foliage at base and centre of shrubs. Regular pruning in the past would have ensured these shrubs maintained a denser shrub form. However, lack of maintenance over time has allowed these shrub species to become overgrown. Alternate shrubs that exhibit more desirable plant growth characteristics are cotoneaster, ninebark and dogwood as well as smaller shrubs such as juniper, currant, rose and dwarf lilacs varieties. All of these shrubs species functioned well in the park because they provide barrier and screen planting while maintaining a dense form. An increased use of these alternate shrub species as replacements for the more traditional caragana, lilac and honeysuckle throughout the Park is recommended.

Caragana arborescens or Common Caragana has been identified as an invasive species by the Saskatchewan Conservation Data Center, a partnership between the Province of

Saskatchewan and Nature Saskatchewan. Caragana is present throughout all of Wascana Center including screen plantings, lakeshore plantings and Native Plant Stands. Caragana planted in beds that are surrounded by regularly mown turf will not likely spread.

Lakeshore and Native Plant Stand areas have a higher potential to see Caragana migrate and threaten the survivability of native plants. It was observed that Caragana is the dominant lakeshore species west of Broad Street. Caragana was observed as invading the Native Plant Stands along the shoreline east of Broad Street.

Although this plant plays a critical role in lakeshore stabilization a park management strategy needs to be developed to control the spread of this plant species and to replace it with several alternate slope stabilization species such as native alder, dogwood, buffaloberry, rose, sandbar willow, chokecherry, pincherry and others indigenous plant species.

Overall, the condition of shrubs in Wascana Center raised the issue of long term planning for WCA shrub beds. Due primarily to age and current lack of maintenance many shrub beds will require replacement over the next 10-20 years. Thinning and pruning of shrubs will resolve many of the immediate issues noted in the assessment however over the long term replacements will be required to ensure a healthy park planting for the future.

(Shrub beds in critical condition are illustrated in Drawing L.5).

Recommendations:

- Thin, head back and remove shrubs as necessary from bed to create healthier, less dense shrub planting.
- Install and maintain a mulch cover for shrub beds throughout the entire Centre.
- Develop a park management strategy to replace shrubs that cannot be renewed by pruning or thinning, with a variety of alternate species better suited to different landscape applications to establish a species diverse ecosystem throughout WCA.
- Remove invasive shrub species particularly Caragana wherever that plant population threatens the establishment or survival of other plant species in the designed or natural landscape. Over the long term, removal of Caragana is recommended and replacement with alternate indigenous plant species is recommended.

Further, we recommend that Wascana Centre undertake a review of Best Practises for landscape maintenance procedures. This review should include turf, trees, and shrub and perennials. We believe that this review is important to ensure that WCA is using the best possible techniques for maintaining a healthy plant and turf population.



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ASSESSMENT

Project Title

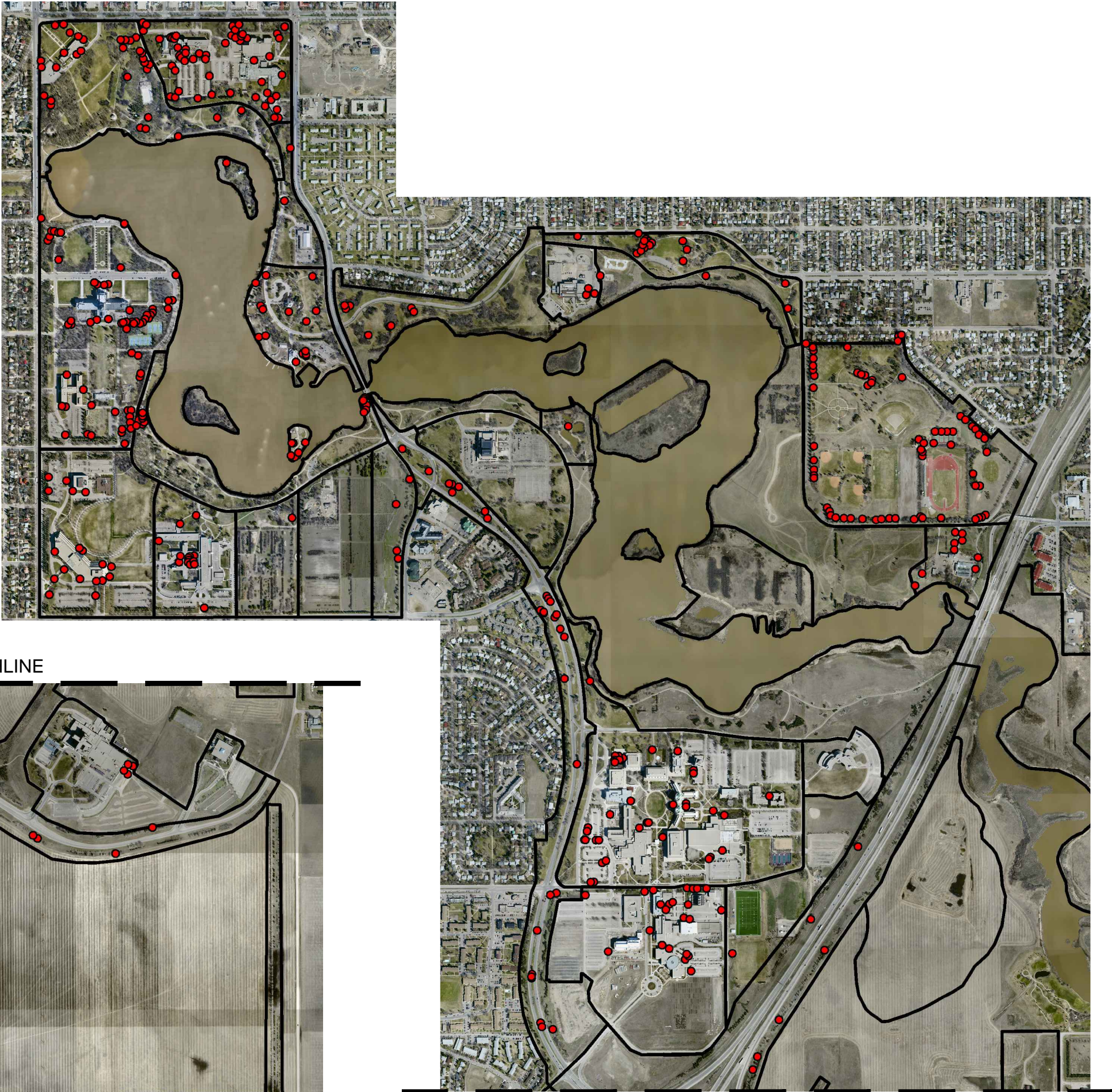
SHRUBS IN CRITICAL
CONDITION

Drawing Title

Drawn AA Checked LS

Scale 1:150000 Date 2012/08/23

Project No. 12.026R Drawing L.5



MATCHLINE

MATCHLINE

4.2.4 GREENHOUSE ASSESSMENT

Ground History and Management Strategy

Operation of a greenhouse at Wascana Centre has been part of the history of the Authority since its inception. Although the operation of the greenhouse has changed over time, within the past five years the management and staff have secured a fairly stable crop production and greenhouse operation strategy.

Greenhouse staff has secured a five year contract to supply the City of Regina with all annual bedding plants for outdoor flower beds in Regina's parks. In addition the Greenhouse is growing and maintaining a supply of ornamental indoor plants for public display at the Regina City Display Greenhouse and for public civic events and seasonal celebrations such as Christmas and Easter. This contractual work has become a major cornerstone of the strategy to maintain an economically viable crop production operation. The contract work for the City of Regina fits well with crop production objectives to meet the needs of the Provincial Government, the University of Regina and Saskatchewan Institute of Applied Science Technology. The services provided to these clients consist of indoor plant decorations for offices, public spaces and public functions such as the Legislative House opening, official political visits and convocation exercises for the University. To secure a full year of work Greenhouse staff are also committed to producing, planting and maintaining annual and perennial flower crops for flowerbeds in Wascana Centre as well as production of liner stock of ornamental trees and shrubs for landscape renovation and reforestation.

This management strategy has given the Greenhouse Operation a diversity of crops, a consistent pattern of crop production and production practices, and relative stability in the direction the greenhouse crop production will go in the next five years. This is a good indicator of an economically healthy and viable operation.

Greenhouse Crop Production

The production of a greenhouse crop is essentially the cultivation of plants under controlled environmental conditions. The Assessment considers how well the key operational components of this controlled environment are being managed. The components and their management are assessed as follows:

Temperature, Air and Light Control

Temperature and air control in the greenhouse is maintained primarily by the supply of heat from a hot water furnace and the manipulation of venting devices in the structure. The various plant crops did not show signs of heat stress nor of excessive low temperatures. In the North and South greenhouses the supply of heat comes from a conventional hot water heater. The function of traditional greenhouse ventilation mechanisms such as roof and wall vents have been compromised because of the necessary conversion from original glass glazing to a poly carbonate glazing on the North

Greenhouse. Glass has a natural tendency to break at sub-zero temperatures and during extremes of weather like hail storms. Repairing glass has become prohibitively expensive requiring the conversion of the North Greenhouse to a poly carbonate material. This conversion has made the original ventilating systems non-functional leading to the need for more labour intensive manipulation of wall ventilation and forced air ducts. The South Greenhouse is still covered with glass because funding for a conversion is not available. The new Polyethylene covered greenhouse is heated by a forced air heater and ventilated with polyethylene air ducts and wall mounted fans. Temperature and air control in this House is adequate despite the end walls being completely closed with solid wood construction walls.

Light in the North greenhouse, which is covered with poly carbonate glazing, is poorest because the glazing material discolors over time exposed to sunlight. Some foliage crops and flowering crops in this Greenhouse required supplemental light fixtures to achieve adequate light quality however the plants show no sign of light deficiency. The glass in the South greenhouse allows adequate sunlight to pass through for production of annual bedding plants, however, panels of glass will at times break requiring expensive repair and putting plants at risks. The new Poly-covered house provides better light quality than the one covered with poly carbonate and the annual bedding plants in this house do not require supplemental lighting.

Overall greenhouse management has been able to overcome the temperature, light and air circulation problems related to operation of the two old greenhouses (the North and South ones). They have adjusted plant growing techniques and practices to function effectively and produce a quality crop.

Growing Medium and Nutrient Control

Growing medium or substrate used for crop production is selected specifically for different crops grown in the Greenhouse. All annual crops are grown in a commercially prepared material called “Pro-mix” which contains; peat moss, perlite, slow release fertilizer, but no soil. This material has already been mixed to meet the nutrient demands of annual bedding crops. Evidence that this growth substrate is very effective shows in the vigorous healthy growth of annual plants. Potting soil for foliage plants, other than the annual crop, consists of a soil base amended with peat moss, perlite compost and aged livestock manure. This potting soil is generated by greenhouse staff and used to grow indoor display plants. For some specific crops such as tropical plants and woody ornamentals grown as nursery liner material wood bark is added to the potting soil to encourage a more vigorous and healthier root mass in a short growing time. The content of the potting soil mix is determined mostly by the crop it is intended to support. Little emphasis is placed on soil analysis and a greater attention is given to observed results from different soil amendment blends.

Compost material is generated from leaf litter collected by park maintenance staff. This compost material is added to outdoor flowerbeds at the rate of 1 inch of compost over the entire bed each year. In addition rotted manure is also purchased and additionally aged to

destroy weed seeds before being used as a source of organic matter. Previously used Pro-Mix potting material is also salvaged and reused in the compost mix unless it shows evidence of disease.

Liquid fertilizer is used to supplement naturally occurring soil nutrients. The fertilizer is added to the plant watering system through a mechanical injection system.

Irrigation

Greenhouse staff has tried implementing a hydroponic watering system however they found that the variety of crops grown in a relatively small greenhouse operation made this automatic watering system impractical. Similarly other forms of automated irrigation proved to be too general to supply the correct amounts of water for the varied crops.

Pest and Foreign Material Control

An Integrated Pest Management program is practiced by Greenhouse staff. The components of the program include; the introduction of insect pest predators, insecticidal soaps, plant washes, a consistent practice of greenhouse cleanliness, and adjustment of growing conditions such as temperature and air movement. Systemic insecticides such as Intercept with a residual effective life of one month are also used for control of some insect pests like aphids if biological controls are not effective and crop health is in jeopardy.

Ultimately the Integrated Pest Management program is made effective through staff training to enable them to make early detection of plant pest problems and understand which controls should be applied.

Cultural Practices

The crop of annual flowers consist of a broad variety of species from the common petunias, marigolds, pansies, geraniums and snapdragons to the less familiar salvia, cosmos, kochia and fountain grass and other more exotic species. Approximately 75% of the crop is seeded, germinated and grown at the Greenhouse using automated seeding systems, in plugs or growth trays to avoid the need for labour intensive transplanting. About 25% of the crop is purchased as very young rooted seedlings from commercial growers where plant patents prevent availability of seed stock. These plants are grown an additional 2 to 3 three months in the Greenhouse. Greenhouses used solely for annual crop production are taken out of service during the fall and winter to minimize operational costs.

Tropical plants and office display crops requiring a 12 month growing period are consolidated in one greenhouse which is operated all year. This greenhouse also contains the mist frame for rooting cuttings.

The use of rolling benches in all greenhouses maximizes the space available for plant production eliminating the need for all but one walkway.

The Greenhouse Operation also includes a root cellar which is used to advantage to over winter certain plants for repeated use each year by rootstock regeneration and plant propagation. This facility eliminates the need to purchase new crops each year. The root cellar is also used to over-winter ornamental tree seedlings which are grown as liner material for the Nursery.

Synopsis

The Wascana Centre Greenhouse Operation is indicative of a healthy and progressive management strategy. Good crop production practices are used throughout and a large variety of crops optimize use of the facility throughout the year. The success in achieving crop production goals are made complicated and more difficult by the aging and ailing physical plant. The building review has been completed the engineering assessment team.

4.2.5 NATURALIZED AREA ANALYSIS SUMMARY & RECOMMENDATIONS

One of Wascana Centre's mandates is the conservation of the environment. Several areas around the park are being maintained as naturalized areas in which maintenance practices utilize the natural processes of plant growth to establish stands of native plants and provide habitat for wildlife. (Landscape management types, including naturalized can be found on Drawing L.6). Throughout Wascana Centre there are examples of successful and problematic practices used to maintain naturalized landscapes.

Generally the grass and herbaceous cover is well established in naturalized areas and creates a good ground cover. Where naturalized grass and dryland grass is mown, such as around the Legislative Grounds, Waterfowl Park Outlook, and Douglas Park, the grasses have outcompeted weeds that threaten the area. In sectors where grasses are not mown throughout the growing season such as Wascana Hill, the First Nations University and Pelican Island, there evinedce of invasive weed species colonizing large areas displacing native plants species. Weeds such as *Cirsium arvense* (common name Canada Thistle) and *Melilotus officinalis* (common name Yellow Clover) are on the Saskatchewan Conservation Data Centre Invasive Weed Species List. These plants are very aggressive and need to be controlled to encourage a more diverse ground cover. Methods of aggressive control would include spot application of a selective herbicide like 2,4-D, or a broad spectrum herbicide like glyphosate. More passive and less environmentally intrusive control methods would include mowing areas of infestation more frequently to encourage grasses to stool out and compete, and to remove and destroy flower buds before seed set. The implementation of controlled burn practices particularly on isolated islands, is another effective tool in the control of invasive plant species.

During the landscape assessment Native Plant Stands were identified as being primarily along the lakeshore edge and are composed of a range of self-propagating tree and shrub species. Native Plant Stands were found along the lakeshore edge and dryland landscapes which had originally been planted and manicured but had been allowed to naturalize after becoming part of Wascana Centre Authority. In the formalized area or sectors west of Broad Street the native plant stands are predominantly along the water's edge. The shoreline of the Lakeshore Park, Wascana park, College Campus, Queen Building and parts of Wascana Place subareas consist predominantly of *Caragana* growing up to 12 feet tall. This plant is vigorous, and provides slope stabilization along the shoreline. However, it also creates a dense tall screen that block views to the lake from pedestrian corridors along the lakeshore. A more diverse native plant population along the shoreline would create a more beneficial plant ecosystem. The Centre should address this objective in the long term by replacing most of *Caragana* along the edge of Wascana Lake with a more diverse complement of plant species. The first phase of *Caragana* removal and replacement would include thinning and pruning of certain sections of lakeshore to allow for views and physical access to the lake.

The sectors east of Broad Street such as Goosehill Park, Science Center and Waterfowl Park subareas have a range of species present including Willow, Green Ash, Manitoba Maple, Russian Olive, Siberian Elm, Sandbar Willows, Snowberry, Dogwood, *Cotoneaster* and grasses. The Native Plant stands along the lake edge are generally well established with little weeds or deadfall. To address public safety along the lakeshore, consideration should be given to provide somewhat more formal lake access along the shoreline where there is evidence of pedestrians walking to or along the lakeshore. Native Plant Stands within Wascana Hill subarea includes the species listed above with the addition of *Caragana arborescens* invading and dominating long extensions of the shoreline. Removal of *Caragana* and the establishment of native plant species is required to maintain the health of the naturalized habitat area.

Within the Waterfowl Habitat subarea, shoreline vegetation is vigorous and clear of invasive species. Within the interior of this subarea are a variety of plant species. Old plantings of *Caragana* and Lilac are found throughout and are growing vigorously. Maltese Cross, Juniper, Hawthorne and Currant are remnants of old plantings and appear to only be growing in isolated areas. Additionally, Irises are spreading along lower areas of the grassland where moisture is readily available. These plants may not cause any great concern for the habitat. Snowberry can be found spreading throughout the grasslands providing evidence of good natural species variation. There are some patches of Canada thistle that are colonizing areas of land.

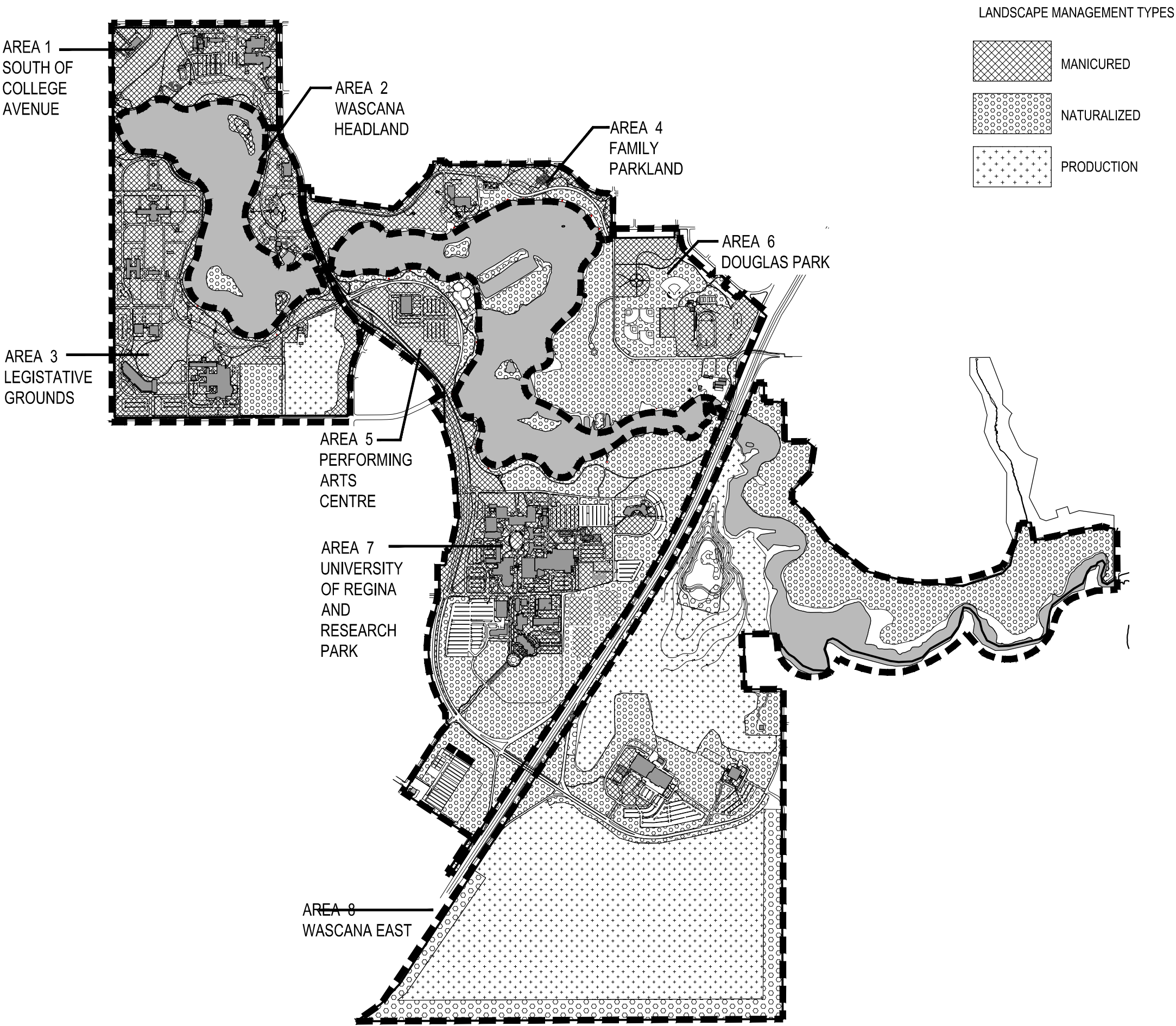
Along the Performing Arts Center Shoreline subarea Native Plant Stands of Willow have suffered some dieback. Deadwood should be removed to encourage new growth before weeds invade the area. This area also include a cat tail marsh in which tremendous habitat value is available and many species of birds were noted.

Generally, Native Plant Stands within the naturalized area east of Broad Street are successfully self-propagating to maintain a diverse plant population. However, there is

evidence in these areas that plant species such as American elm, poplar, Manitoba Maple and Willow are old and declining health. A planned tree replacement program in these areas would ensure the next generation of the tree species is established when the old trees die.

Recommendations:

- Establish an invasive species list that should be eradicated
- Establish a Native Plant Stand rehabilitation plant list that could be used to aid naturalization efforts.
- Employ a long term restoration program to replace Caragana and other identified invasive species along all shorelines of Wascana Lake with a diverse population of native plant species to establish a healthy ecosystem along the lake edge.
- Maintain Native Plant Stands to ensure the continued suppression of invasive species.
- Implement a weed control program for dryland grass areas.



General Notes



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LANDSCAPE ASSESSMENT

Project Title

WASCANA LANDSCAPE
MANAGEMENT TYPES

Drawing Title

Drawn	AA	Checked	LS
Scale	1:200000	Date	2012/08/23
Project No.	12.026R	Drawing	L.6

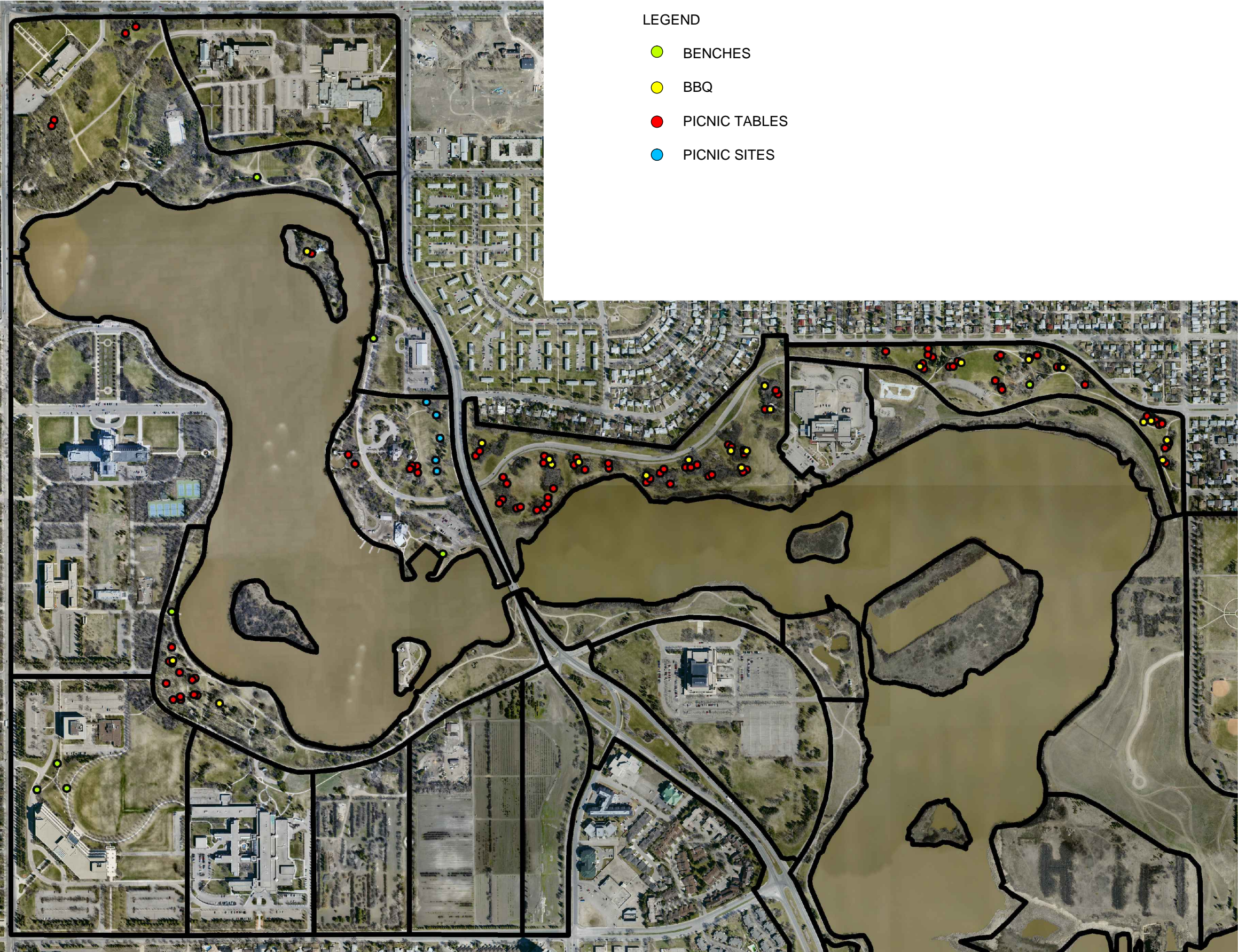
4.2.6 SITE FURNITURE

Generally most benches were in relatively good condition. A few require replacement of the wood planks and a few were missing entirely. Concrete and metal trash containers and BBQs were assessed. In some cases the exposed aggregate concrete structure was in poor condition – not able to be repaired – and require replacement. The metal components of a number of trash containers and BBQs require repair. Most commonly the metal grill or backslash of the BBQ was either bent or missing.

A number of picnic tables require replacement. Replacement was required when the concrete base is in poor condition and cannot be repaired. Additionally, there were a number of tables which required replacement of wood seats or tops. Some of these were considered critical.

Generally the information kiosks are in relatively good condition. Most timbers have checking at the ends and metal components show some rust. The kiosks at Candy Cane Park and at Speakers Corner show more extensive rust and require attention. Scratches and some graffiti can be found on the metal components of the kiosks. Paint is obviously fading on most kiosks and repainting is recommended.

Site furniture that is in critical condition is illustrated in Drawing L.7.



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Project Title

SITE FURNITURE IN CRITICAL
CONDITION

Drawing Title

Drawn AA Checked LS

Scale 1:120000 Date 2012/08/23

Project No. 12.026R Drawing L.7

4.2.7 ASSESSMENT SUMMARY WITH COSTS

Detailed budget breakdowns for the summarized upgrades below can be found in Appendix F.

Sub-Area #	Sub-Area Name	Estimated Cost - Urgent	Estimated Cost - Total
1a	Wascana Park	546,365.00	1,112,028.00
1b	College Campus	459,014.00	646,021.00
1c	Willow Island	4,723.00	25,639.00
2a	Queen Building	88,804.00	169,859.00
2b	Wascana Place	349,199.00	593,904.00
3a	Legislative Grounds	453,846.00	1,470,074.00
3b	TC Douglas	204,880.00	555,429.00
3c	Wascana Rehab	244,721.00	432,905.00
3d	West Nursery	10,155.00	122,720.00
3e	East Nursery	933.00	24,245.00
3f	Hillsdale Corridor	9,947.00	36,557.00
3g	Lake Shore	178,657.00	484,985.00
3h	Spruce Island	0.00	60,000.00
3i	Pine Island	43,181.00	78,286.00
4a	Goosehill Park	314,743.00	723,247.00
4b	Pelican Island	0.00	9,250.00
4c	Science Centre	73,876.00	117,633.00
4d	Candy Cane Park	152,516.00	319,610.00
4e	Waterfowl Park Outlook	15,876.00	58,359.00
5a	Performing Arts Centre Shoreline	3,780.00	27,766.00
5b	Performing Arts Centre	186,486.00	318,175.00
5c	Waterfowl Display Ponds	33,649.00	86,897.00
5d	Goose Island	0.00	40,000.00
6a	Tern Island	0.00	7,500.00
6b	Waterfowl Habitat	0.00	175,000.00
6c	Wascana Hill	3,330.00	80,180.00
6d	Douglas Park	272,145.00	473,851.00
6e	Maintenance Yard	27,388.00	50,443.00
7a	Wascana Parkway	213,003.00	407,847.00
7b	U of R Main Campus	491,088.00	1,034,236.00
7c	West Floodplain	8,100.00	81,982.00
7d	First Nations University Campus	0.00	3,230.00
7e	Innovation Place	73,314.00	336,862.00

7f	University Sports Fields	35,887.00	59,328.00
7g	Community Gardens	82,758.00	104,898.00
8a	Hill	0.00	11,150.00
8b	East Floodplain	0.00	29,485.00
8c	SIAST	195,126.00	338,262.00
8d	Mackenzie Property	0.00	12,500.00
8e	Bypass Planting	82,231.00	244,346.00
8f	Wascana Parkway Extension Planting	20,966.00	113,886.00
8g	Shelterbelt	118,350.00	291,750.00
TOTAL LANDSCAPE UPGRADES		4,999,039.00	11,370,325.00

4.3 IRRIGATION ANALYSIS

4.3.1 SYSTEM SUMMARY

The irrigation systems in Wascana Centre fall generally into two categories: manually and automatically run. Manual systems are those in which Wascana personnel must turn on pumps and zone valves and/or install irrigation heads prior to operating the zone. Automatic systems are those which include electronic zone valves that are operated using an electronic controller.

In most areas, the irrigation system is designed to provide water to turf areas. Additional or separate irrigation is not provided to the shrub beds or trees. The exceptions to this are the University lands, the Innovation Place campus and parts of the legislative grounds. In some cases, large tree or shrub beds have been provided with quick coupling valves that have been previously used for tree / shrub establishment but are no longer employed.

The irrigation line types are varied but generally main lines are asbestos concrete and lateral lines are polyvinylchloride (PVC), polyethylene or, in some areas, a thin-walled PVC. Some steel lines exist, however most are abandoned.

Manual valves are either gate or ball valves. In areas with an automatic system, valves are electric.

Irrigation head types are varied as well. This variation relates to the age of the irrigation installation, changes in availability of products, as well as area to be irrigated. (Irrigation types and installation dates are illustrated in Drawings L.8 and L.9). Turf valves, also called quick coupling (QC) valves, are present in a number of places in Wascana Centre. These are metal units that tie into the lateral line, into which a number of components can be inserted. In many cases impact heads are used in turf valves to water wide areas of lawn. Impact heads must be inserted into each turf valve prior to opening the zone valve. They are relatively strong metal components that, using the current QC valve layout, can provide head-to-head coverage. In addition to the impact heads, QC valves are also fitted

with hose bibs to which hoses and movable impact heads are connected. These are placed in the landscape and moved periodically until the whole area of turf is irrigated.

Stand pipes are found in one location, Douglas Park. These extend above the turf surface about 30cm. Hoses and movable impact heads are connection and moved periodically.

Where staff and resources have been available, turf valves have been changed to pop-up heads. Once installed, this change significantly reduces the labour involved to operate a zone. For a number of years, Rainbird R-50s were used as the replacement for QC valves. The maximum radius for these units did not quite achieve head-to-head coverage. However, these were chosen because of their ability to effectively deal with the sediment and other material that is found in the water sourced from the lake. These heads are no longer available, so where QC valves or R-50s are being replaced, Rainbird Maxi-Paws are being installed. These units are a simple pop-up impact head that is designed to deal well with non-potable water. They also have slightly longer throw, so they almost provide head-to-head coverage.

In older areas that have not yet been renovated, an older-style metal pop-up impact head can be found. The body of the unit is metal making it much harder to damage than the plastic version, however, these units are no longer being made making it difficult to find replacement parts.

Spray heads are used in certain locations where the turf areas are smaller, or where there are smaller shrub beds. Spray heads provide a continuous fan-shaped distribution of water in finer droplets. These are generally restricted to the University, Innovation Place, around the SIAST Parkway building and in some areas of the legislative grounds. Sprays are designed for potable, clean water; when they are employed using lake water they are prone to plugging.

Driplines are used in a few locations. Drip irrigation is an efficient use of water for smaller spaces, especially shrub beds. Driplines are installed close to the root zone of the plant, generally under mulch, and as such, loss through evaporation is much less than a typical pop-up system. Driplines can distribute relatively low volumes of water because their delivery is so efficient. Flow is controlled by small emitters, which are easily plugged if the water source is not clean, hence their use only with potable water.

Irrigation water is of two types – that sourced from Wascana Lake and that sourced from the City's municipal water system. The majority of Wascana Centre's irrigation comes from the lake using 5 pumps in 4 pump houses. There are also several locations which use potable water: University, Innovation Place, area north of the Legislative building and some of SIAST. Naturally, water sourced from the lake carries with it more sediment and organic material than potable, City-sourced water. The amount of sediment and organic material varies during the season and with the location of the pump intake. Later in the year, the water column contains more organic material as water becomes more replete with algae. If a water intake is close to the bottom, or if the water column contains a lot of sediment (e.g. windy conditions which mix the water column), sediment will be

sucked up into the system. Small fish and other biological matter also become part of the irrigation system.

One important aspect of the irrigation system is its age. The age of the components varies from the 1960s to current (see Drawings L.8, L.9). In some cases the age of the system can be related to the age of the nearby building as they would have been installed at approximately the same time. Most areas are over 20 years old, the exceptions being areas that have expanded recently: the University, Innovation Place, and SIAST. As well, new components have been installed as Wascana Centre personnel have been actively replacing QC valves with pop-up heads. Other new components would be limited to repairs of existing infrastructure.

4.3.2 ASSESSMENT SUMMARY

There are a number of concerns with regard to the current irrigation system. As indicated by WCA personnel, the system was designed to self-drain back to the lake. The result is that the main lines at the pump are very deep – sometimes between 8 and 12 feet. This results in a large project whenever the lines require repair. Wascana Centre personnel will repair lines that are shallower, but over a certain depth they require an outside contractor to excavate and make the repair. This adds to WCA costs and personnel time and disturbs a large area of land that then will require repair. In addition to this, the main lines are asbestos concrete. There are specific health and safety requirements that WCA or an outside contractor must adhere to when fixing breaks in asbestos concrete pipes.

As indicated above, the majority of the fine turf areas are manually irrigated. It is either highly manual, in the case of the areas requiring impact heads, or it is manual in that each pump and zone has to be turned on individually. There are a limited number of Wascana personnel dedicated to irrigation operations, which results in personnel irrigating an area for an hour or two at a time, before they are able to return and turn the zone off. Our highly clay soils do not allow water to infiltrate very quickly, which results in water waste as it runs off onto streets and sidewalks.

The impact that the age of the components has can be seen in the failures. A lot of failures / leaks happen at the fittings. These leaks are visible when the line is in the ground. However, when the fittings rust and fail on the main line in the tunnel, this leak is not seen until the Powerhouse personnel, who patrol the tunnel, notice it.

It typically takes a long time to blow out the system in the fall – approximately three weeks. This is partly due to the design of the system (self-draining and having to blow out from numerous points) and partly because of the expected pressure that the system can withstand (failing fittings and some poor quality pipe provide a risk of breakage). If blowing out the system could be condensed, the fall watering period could be extended. This is especially beneficial to coniferous trees, as well as to newly planted material.

Because water comes from the lake in most areas and with this comes sediment and organic material, the irrigation heads require constant maintenance to ensure that they are

operating properly. Algae, sediment and even small fish are routinely cleaned out of the basket heads. In addition to the maintenance, the material in the water stream has a deleterious effect on the components themselves, wearing them down before they are expected to need replacement. Wascana Centre recently installed a backwash filter at the Douglas Park pump. This filters water before it enters the pump and the irrigation components. Wascana personnel report fewer heads that require attention in this area.

Wascana Centre's replacement of QC valves with pop-ups allows them to decrease the number of hours spent to setup and operate a zone. However, the pop-ups do not always create head-to-head coverage which is the design goal for irrigation systems. Typically irrigation heads do not water as well immediately adjacent to the head. Head-to-head coverage ensures that this effect is minimized.

Lastly, there are areas where one pump is being used by two areas. When two areas "share" the pump the farthest location from the pump will not receive enough pressure to operate their zones.

4.3.3 ASSESSMENT DETAIL

Areas 1 & 2

- Water source: lake
- Pump location: Willow Island pump house
- Installation: from 1977 – 2004
- Operation: manual
- Heads: Turf valves with impact heads and hoses, metal pot impact drives, small number of sprays, R50s and MaxiPaws
- Comments:
 - The pump has a timer however, it is not typically used.
 - WCA personnel water intensively used spaces in the early morning to avoid conflict with pedestrians.
 - According to WCA personnel, there is a lot of thin-walled PVC pipe in this area. It is of poor quality and when breaks occur, the repair entails more than the typical amount of pipe to be replaced due to the pipe splitting longitudinally when cut.
 - This is one of the few areas that still have the metal pot impact drives.
 - This area is a common site for summer events, which creates additional pressure on the irrigation system components.

Area 3

- Water source: lake
- Pump location: City supply, Spruce Island and Nursery pump houses
- Installation: from 1968 – 2012
- Operation: manual and automatic

- Heads: Turf valves with impact heads and hoses, small number of sprays, R50s and MaxiPaws
- Comments:
 - The majority of this area is watered using lake water out of the two pump houses. The exceptions to this are the newly renovated areas north of the legislative building and in the courtyard of the Wascana Rehabilitation Centre. The water for both these areas is sourced from the City water supply. Both areas are run automatically.
 - The irrigation in the nursery area was not specifically reviewed.
 - There is a large area of rough turf and vast tree stands between the legislative building and the T.C. Douglas building that are not irrigated. In some locations along Albert Street, the tree stands that contain quick couplers used previously for tree establishment.
 - In the centre of the Legislative mall area, the mainline runs in the tunnel.

Area 4

- Water source: lake
- Pump location: City supply, Willow Island and Douglas Park pump houses
- Installation: from 1965 – 1976
- Operation: manual and automatic
- Heads: Turf valves with impact heads, small number of sprays, R50s and MaxiPaws, dripline
- Comments:
 - This area is primarily fed from Willow Island pump house to the west and from Douglas Park pump house to the east.
 - There is a small area adjacent to the IMAX Centre which is fed from the City supply. This area contains dripline and a timer, however, the timer is not used / working
 - The majority of this area has been switched from impact heads to pop-ups significantly reducing the amount of time spent operating each zone.
 - The line placement in Goosehill Park is such that each zone has to be blown-out in several locations.
 - A filter system has recently been installed at the Douglas Park pump and personnel have noticed a reduction in dirty heads.

Area 5

- Water source: lake
- Pump location: Nursery pump house
- Installation: 1972 (newer at Display Ponds - date unknown)
- Operation: manual
- Heads: R50s and MaxiPaws
- Comments:
 - There is accommodation for two future zones at the Conexus Arts Centre.

Area 6

- Water source: lake and City water supply
- Pump location: Douglas Park pump house
- Installation: 1969 – 2011
- Operation: manual and automatic
- Heads: stand pipes, turf valves with impact heads and hoses, R50s and MaxiPaws
- Comments:
 - The major of the irrigation is done manually, with the exception of the area around the new Leibel Field.
 - Some baseball outfields have been switched from QC valves with impact heads to pop-ups, significantly reducing labour input. However, the track area, cricket pitch, tennis court area, and the lawn area, formerly lacrosse fields, are all watered using QC valves and heads or hoses.
 - The former lacrosse fields contain standpipes to which hoses are attached. These are raised out of the ground about 30cm and are marked with orange paint. These are considered a hazard and should be switched to a QC valves.
 - Considering the amount of use this area receives, we recommend that this area be considered for a high priority for upgrades.

Area 7

- Water source: lake and City water supply
- Pump location: Nursery pump house
- Installation: 1967 to 2012
- Operation: manual and automatic
- Heads: QC valves with impact heads, sprays, R50s and MaxiPaws
- Comments:
 - This area has likely the most complex system due to the many spaces that exist at the University and Innovation Place campuses. The majority of the spaces are automatically controlled. The exceptions to this are the mall on the University campus and all of Wascana Parkway.
 - Most of the area is fed from the City water supply. The exceptions are Wascana Parkway and the north edge of the University campus. These are fed from the Nursery pump house.
 - A booster pump has been installed at the University sports field.
 - There is a large variety of large rotor heads installed in this area, requiring the WCA personnel stock a larger number of part types.
 - WCA personnel have replaced the turf valves with pop-up heads along the curb line of Wascana Parkway. This decreases the requirement for Wascana staff to be immediately adjacent to vehicle traffic.
 - Watering in this area occurs at night to avoid times of high pedestrian traffic.
 - Because there is constant water pressure in the system, leaks must be addressed quickly.

Area 8

- Water source: City water supply
- Installation: 1974 to 2011
- Operation: manual and automatic
- Heads: sprays, R50s and MaxiPaws
- Comments:
 - There is only minimal irrigation in this area, at the SIAST and Parkway buildings. Both areas are fed out of the buildings.

4.3.4 RECOMMENDATIONS

Two of the main concerns about the irrigation systems at Wascana Centre are the age and the manual nature of the system. In addition, we recognize that the appropriate use of water resources is valued by Wascana Centre. We recommend that WCA consider making significant upgrades to the system to create a more efficient watering system that uses water more wisely and reduces manual input.

Since the installation of the majority of the irrigation equipment there have been improvements in technology that Wascana Centre could employ to decrease the amount of time dedicated to irrigation operations as well as to use water more efficiently.

Automatic systems are made up of number of components, chief of which are electric valves and controllers. Controllers are designed to allow the operation of each zone for a preset duration and at multiple preset times. Typically zones are set to run when use of the space is low and when loss from evaporation is less (e.g. early morning). They can also be set to run for a relatively short duration. The high clay percentage in Regina soils makes the percolation rate of the soil relatively slow. Multiple short irrigation times are recommended to ensure that the water is reaching the root zone and not simply running off. Wires connect each electric valve to the controller.

Controllers can be tied into sensors which send the controller environmental information. The simplest of these is a rain sensor. A rain sensor installed in a high, uncovered space is tied into the controller and will send information about recent rainfall. The controller will then stop/alter its watering schedule accordingly. This takes advantage of “free” irrigation and minimizes the negative public perception associated with irrigating while it is raining. A more comprehensive environmental picture can be obtained by employing a weather station. These measure wind speed, temperature, humidity and rainfall and send this information to the controller. These inputs affect the evapotranspiration rate of plant material, which dictates the amount of water a plant or an area of turf requires to maintain good health. In some municipalities, this information is already available in the form a controller would require, and can be purchased from the supplier.

Employing a central computer controller is more beneficial the more controllers and landscape area that you have. Typically, municipalities will use these. Central controllers will allow the common control of all zones within each controller area, allowing one

operator to remotely program, monitor, adjust and manually operate each controller. A weather station can be tied into the controller as well as other inputs such as flow sensor. A flow sensor detects leaks / breaks in the system by sensing the sudden increase in flow. It can be installed at each connection / pump location to monitor the level of flow in the pipe. If the flow suddenly increases, the flow sensor will shut down the water.

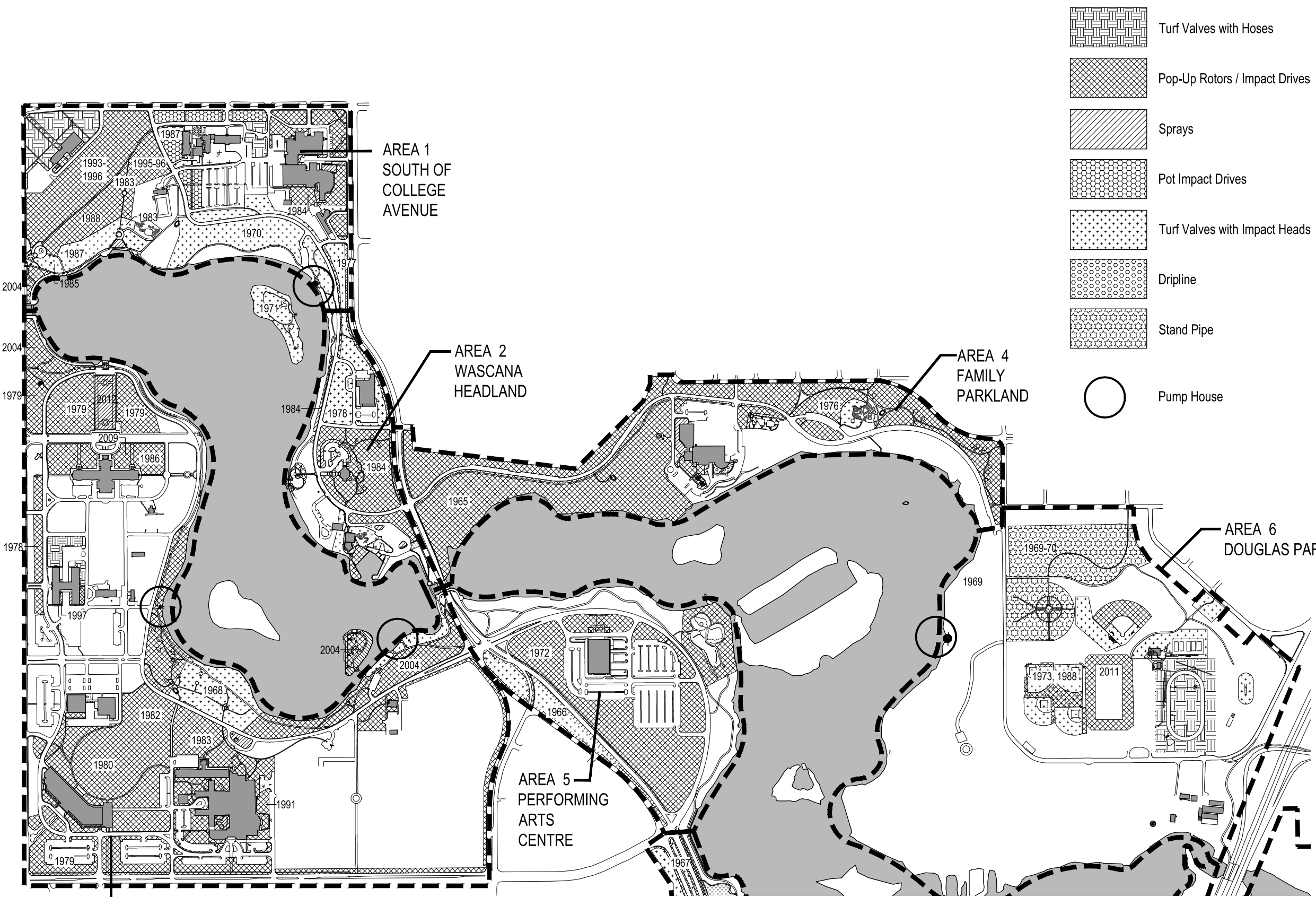
Should Wascana Centre pursue automation, WCA personnel must be trained in the new systems. Further, an ongoing irrigation education system should be implemented in order that staff remains abreast of new methods and technologies.

The other main component in the irrigation system that requires upgrades are the water distribution lines. Especially notable are the large mainlines which are mostly asbestos concrete. We recommend that these lines be replaced. Asbestos concrete is not a pipe material that is used currently, and the repair of these pipes is troublesome in two ways. Because the system was designed to be self-draining the large mains nearest the lake are very deep. Repair of the deepest of these requires either caging the excavation site or creating a large disturbed area, creating extra costs, work and time for Wascana Centre personnel. In addition, though the material itself is stable, when lines are repaired special precautions are required. The lateral lines are a mix of materials as noted previously; however, the mapping of where each line type exists is spotty. Where breaks occur on a sub-par pipe material (e.g. PVC or thin-walled PVC), the opportunity should be taken to replace the entire line.

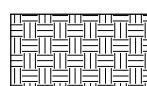
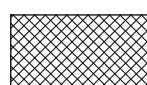

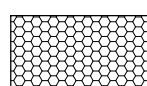


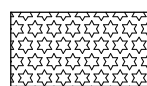
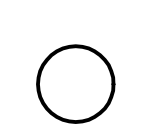
It is recommended that the investment into filtering the lake water be continued. One pump currently has filtering which appears to be making a difference. The four additional pumps should be provided with filtering devices. In addition, if system were to be made automatic, some valves have the ability to filter at the valve, further reducing the material going to the heads.

It is further recommended that:

- Developing specifications to ensure consistency of materials, components and installation throughout the park
- Part of the specification should be for high quality heads that are easy to repair, are durable, and work well with non-potable, filtered, lake water. Specialized heads should be used for sports field applications.
- Watering turf and shrubs/trees separately, to provide the appropriate amount of water to each type of vegetation
- New installations of turf and plant material should be provided high quality amended topsoil so that the clay content is less than what is typically found in Regina soils. This increases water uptake and retention.
- Monitor lake water quality to ensure that lake nutrient and salinity levels will not be deleterious to plant health
- Developing an accurate, easily updatable map of irrigation components.



AREA 3
LEGISLATIVE
GROUNDS

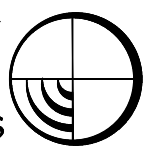
-  Turf Valves with Hoses
-  Pop-Up Rotors / Impact Drives
-  Sprays
-  Pot Impact Drives
-  Turf Valves with Impact Heads
-  Dripline
-  Stand Pipe
-  Pump House

General Notes



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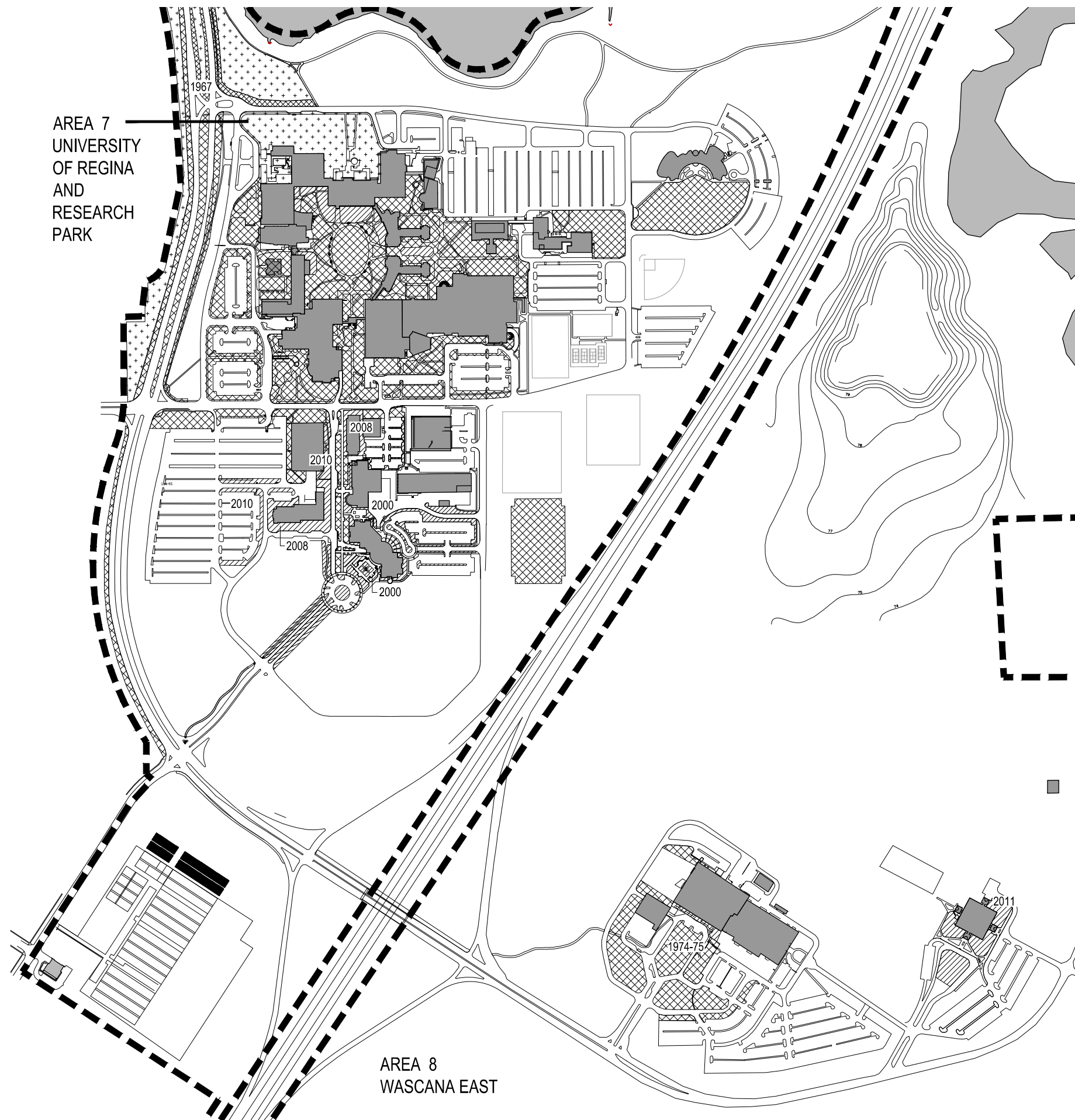
LANDSCAPE ASSESSMENT

Project Title

IRRIGATION TYPES

Drawing Title

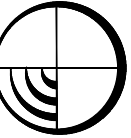
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Scale	1:100000	Date	2012/08/23
Project No.	12.026R	Drawing	L.8



- Pop-Up Rotors / Impact Drives
- Sprays
- Turf Valves with Impact Heads

General Notes



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LANDSCAPE ASSESSMENT

Project Title

IRRIGATION TYPES

Drawing Title

Drawn AA Checked LS

Scale 1:75000 Date 2012/08/23

Project No. 12.026R Drawing L.9

4.3.5 UPGRADE COSTS

The following costs represent a total replacement of the irrigation system, except for the pumps. Pumps were reviewed by Associated Engineering as part of the infrastructure assessment. For ease of estimation, the costs provided here are based on the existing layout of heads and lateral lines.

Includes:

Irrigation Item	Includes:	Estimated Cost
Infrastructure per 1000 m ²	- Heads, lateral lines, new valves, removing old valves, 2 way control wire, boring and hydroexcavating.	\$2,970.00/1000m ² Total Turf Area 1,013,871 m ² Infrastructure Costs \$3,011,196.00
Automation Infrastructure	- Controllers, pump filters, rain gauges, flow sensors, weather station and central controller	\$172,700.00
Mainline Replacement	- 3 – 10” lines (approx. 22000 lin. m)	\$811,260.00
TOTAL IRRIGATION UPGRADES		\$3,995,156.00

If only the asbestos concrete pipes were reinstalled, the total upgrade price would be \$3,699,590.00

4.4 STRUCTURES

Photos referred to in this section can be found in Appendix B.

Area 1 - South of College Avenue

1 Haultain, Ross, Davin & Dunning Monument

Description

- The monument was constructed with stone and has one plaque mounted on each side. The monument is resting on a concrete footing.

Structural Deficiencies

- The mortar joints have deteriorated.
- The capstone appears to have several longitudinal cracks.
- The concrete foundation has cracked on the south side (Photo 4)

Recommendations

- The mortar joints must be repaired to protect the monument from water penetration and weathering effects on the stone.

- The capstone should be replaced to prevent further deterioration and potential water penetration to the interior of the monument.
- The crack in the concrete foundation should be repaired by epoxy injection.

2 Speakers Corner

Description

- Speakers Corner has three brick walls on the perimeter (north-east, north-west & west side) standing approximately 1.3 metres (4.5 feet) high with entrances on the north and east side, as well as a stairway on the south leading to Wascana Lake (Photo 1).
- On either side of the stairway there are Tyndall Stone monuments supporting large lights (Photo 2).
- The area within the brick wall and the stairs were constructed with landscaping brick

Structural Deficiencies

- The north brick wall is leaning out approximately 10 cm (4 inches) at its worst point (Photo 3); as a result the bricks have cracked (Photo 4 & 5).
- The bottom course of bricks on the north wall is at grade, which has led to water damage and moss growth. Other bricks throughout the wall also show signs of deterioration (Photo 6)
- The landscaping bricks have heaved and cracked in some locations. Also, the bricks on the stairs have deteriorated (Photo 7).
- The Tyndall Stone monuments appeared to have shifted. The mortar in the east monument has deteriorated (Photo 8). The mortar in the west monument has deteriorated and one stone had moved outwards approximately 5 cm (2 inches) (Photo 9). There was also a cracked section on another section of stone (Photo 10).

General Comments

- It appears that a sewer line runs below the brick wall. The section of wall that is most out of line was above the sewer line. There was also a strong sewer smell in this location, during investigation.

Recommendations

- The sewer line below the north-east wall should be investigated to determine if there has been a collapse, which has led to failure of the wall.
- Once the cause of the walls instability has been fixed the wall and foundation should be completely rebuilt.
- The stairway bricks that have deteriorated should be replaced.
- The Tyndall Stone monuments should be reset and re-pointed.

3 Regina Boat Club Monument

Description

- Short Precast concrete pedestal with exposed aggregate and plaque mounted on the south side.

Structural Deficiencies

- No deficiencies were observed.

Recommendations

- The pedestal could be sealed with a penetrating concrete sealer to increase its long-term durability.

4 Wascana Playground Structures

Description

- One timber shelter was assessed. The structure covered approximately 20x15cm (24 x16 feet) and was constructed with 20 x 15cm (8 x 6 inches) and 15 x 15 cm (6 x 6 inches) timbers with steel plate and bolted connections. A concrete slab on grade is under the shelter.

Structural Deficiencies

- No deficiencies were observed.

General Comments

- The timbers show some checking, however none of the members appeared to be deflecting or near failure.

Recommendations

- We have no recommendations at this time.

Area 2 - Wascana Headland

5 Oskana - Sculpture

Description

- Bronzed buffalo skulls on a Tyndall Stone pedestal, and surrounded by six granite rocks with carvings.

Structural Deficiencies

- No deficiencies were observed.

Recommendations

- We have no recommendations at this time.

6 Lady Slipper Courtyard Structures

Description

- Four structures were assessed; one gazebo with structural steel columns and wood roof (Photo 1), two steel gates with wood roofs (photo 2 & 3), and the perimeter steel fence (Photo 4).

Structural Deficiencies

- The wood shingles on the gazebo and steel gates are weathered and have some moss growing on them.
- The paint on the steel fence has chipped off or deteriorated in some locations. Some rust has begun to appear (Photo 5).

Recommendations

- The shingles do not need to be replaced at this time, however may need to be replaced in the next 5-10 years.
- The fence should be repainted to protect from rust.

Area 3 - Legislative Grounds

7 Saskatchewan War Memorial

Description

- 25 tyndall stone monuments; 19 support plaques with soldiers names, 3 with small plaques, one supporting a brass statue and one supporting flag poles (Photos 1 to 3).
- One limestone monument supporting a brass statue.
- The concrete walkways have been bordered with Tyndall Stone.

Structural Deficiencies

- The mortar at the base of the limestone monument was loose and could be removed by hand. (Photo 4).

General Comments

- The concrete walkway at the north monuments has deteriorated (Photo 5).
- Some of the flat surfaces of on the south monuments were blackened (Photo 6), and some green stains were visible around the plaques (Photo 7).
- One corner of the Tyndall Stone at the base of the east statue has broken off (Photo 8).

Recommendations

- The Tyndall Stone should be gently washed to remove black and green stains. They should not be pressure washed. Consult with conservator or mason for best practices.
- The limestone base should be re-pointed.

8 Saluting Monument

Description

- Five concrete pedestals approximately 41cm (16 inches) diameter and 76 cm (30 inches) high.

Structural Deficiencies

- The center pedestal has some cracking in the concrete occurring at the base.
- The center monument had cracks around the top of the pedestal.

Recommendations

- Cracks should be repaired with epoxy injection.

9 Ross Thatcher Monument

Description

- The monument was constructed with cast-in-place concrete and exposed aggregate. There are two walls, one supports a plaque and the other supports a wooden bench.

Structural Deficiencies

- It appears that the bolts holding the wooden bench have bent and are very loose; the bench itself is not secure.

Recommendations

- The concrete walls should be sealed with a penetrating concrete sealer.
- The bolts that hold the bench in place should be replaced and the bench made secure.

10 Lakeshore Park Totem Pole

Description

- The timber totem pole is approximately 3.7 metres (12 feet) high and 1.1 metres (3.5 feet) in diameter. There are 2 wings extending from the structure. The wood has been painted (Photo 1). The totem pole rests on a concrete foundation and appears to have grout below the base of the structure to make it level. There was also a precast concrete monument supported on concrete to the west of the totem pole (Photo 2).

Structural Deficiencies

- The totem pole had several shrinkage cracks in the wood (photo 3).
- The grout below the totem pole had cracked and can be removed by hand (Photo 4).
- The base of the totem pole has rotted (Photo 5).
- The concrete base below the totem pole did not appear to be level, however the grout below was keeping the pole plumb.

- The concrete base below the precast concrete monument was cracked (see Photo 2).

Recommendations

- The shrinkage cracks in the totem pole should be monitored; if it appears that any part of the structure may fall off it should be appropriately anchored.

11 Boy Scout Monument

Description

- The monument is approximately 12 meters (39 feet) in diameter with eight short precast pedestals around the perimeter of the foundation and one round pedestal in the perimeter.
- The pedestals are constructed with quartz aggregate and white cement.

Structural Deficiencies

- No Structural Deficiencies were observed.

General Comments

- Moss and fungal growth on the monuments may lead to deterioration of the mortar (Photo 2).
- One pedestal located on the perimeter of the monument had a broken corner (Photo 3).

Recommendations

- The moss and fungus should be removed from the surface of the monument.
- The monuments should be cleaned and sealed with a penetrating sealer to improve durability.

12 Surveyor's Monument

Description

- Two concrete walls on either side of a stairway (stairway runs north-south), and a third wall running in the east-west direction. The walls are constructed with exposed aggregate, and are supported on concrete piles.

Structural Deficiencies

- The west wall has several cracks located above the piles.

General Comments

- The cracking in the west wall is likely due to differential movement of the piles.
- The stairs has some minor cracking.

Recommendations

- The cracks should be epoxy injected. Movement will continue to occur, however the epoxy increase the durability of the wall. Cracks should be repaired with epoxy injection.

Area 4 - Family Parkland

13 Candy Cane Park Structures

Description

- Four structures were assessed: two candy cane monuments at the parking lot (Photo 1 & 2), a concrete retaining wall (Photo 3), and a timber retaining wall (Photo 4).

Structural Deficiencies

- The concrete retaining wall has several small cracks all around the structure. It appears that the west end of the wall was repaired, but the poor bond between the concrete led to cracks and some breaking off of the concrete (Photo 5).
- Many of the timber members along the retaining wall have begun to rot.
- Some members on the timber retaining wall are out of alignment.

General Comments

- The Candy Cane Monuments have formed minor cracks in the paint.

Recommendations

- The Candy Cane monuments do not need repainting at this time; however, they should be maintained as required.
- The concrete retaining wall should be pressure washed and sealed with a penetrating concrete sealer. The west end of the retaining wall should also be repaired by epoxy injecting the cracks or chipping off the damaged sections and refinishing the end.
- The timber retaining wall should be treated and rotten members should be replaced. The wall should be realigned to ensure it is plumb.

Area 5 - Performing Arts Centre

14 Four Seasons - Sculpture

Description

- Weathering steel sculpture resting on steel supports

Structural Deficiencies

- No deficiencies were observed

Recommendations

- We have no recommendations at this time.

15 Waterfowl Park Display Ponds

Description

- We assessed the display structure in the middle of the park. The structure was welded structural steel with a wood shingled roof.

Structural Deficiencies

- No deficiencies were observed.

General Comments

- Wood shingles on the west side of the display structure have fallen off.

Recommendations

- The missing shingles should be replaced.

Area 6 - Douglas Park

16 Ducks Unlimited Monument

Description

- Two precast concrete pedestals with exposed aggregate and supported by a concrete footing.

Structural Deficiencies

- No deficiencies were observed.

General Comments

- The monuments and the slab they rest on appeared to be in good condition.

Recommendations

- Penetrating concrete sealer may be used to increase the durability of these monuments.

Area 7 - University of Regina and Research Park

17 Mind's Garden - Sculpture

Description

- A cast bronze sculpture approximately 10.6 metres (35 feet) in diameter and 3.5 metres (11.5 feet) high. The sculpture is comprised of 16 sections; eight sections are bolted to a concrete foundation. The remaining eight sections act as lintels over the openings and are welded to the adjacent panels (Photo 1).

Structural Deficiencies

- No deficiencies were observed.

Recommendations

- We have no recommendations at this time.

18 Firehouse Elements

Description

- Weathering steel table supporting 7 sculptures on a concrete pile foundation.

Structural Deficiencies

- The south leg support appears to have split.

General Comments

- The concrete piles are approximately 10 cm (4 inches) above the ground. Three of the piles were either poorly finished, or they have deteriorated.

Recommendations

- New pile caps matching the north-east corner should be provided under the other three supports.
- Holes should be drilled at the base of each leg to release trapped water and reduce the likelihood of further splitting.

4.4.1 UPGRADE COSTS

ID #	Structural Element	Recommendation	Estimated Cost
1	Haultain, Ross, Darin & Dunning Monument	- Re-point deteriorated mortar joints	1,200.00
		- Replace Capstone	1,200.00
		- Epoxy inject cracks in concrete foundation	600.00
2	Speakers Corner *	- Rebuild existing wall on new foundation	40,000.00
		- Replace broken bricks on stairs	3,000.00
		- Reset and re-point Tyndal stone monuments below lanterns	15,000.00
3	Regina Boat Club Monument	- Seal concrete pedestal with penetrating sealer	200.00
4	Wascana Playground	- None	0.00
5	Oskana	- None	0.00
6	Lady Slipper Courtyard Structures	- Remove rust and repaint fence	5,000.00
7	Saskatchewan War Memorial	- Gently wash Tyndall stone and remove stains	4,000.00
		- Re-point where necessary	1,000.00

8	Saluting Monument	- Epoxy inject crack in concrete	300.00
9	Ross Thatcher Monument	- Seal concrete walls with penetrating sealer	400.00
		- Replace the bolts that attach the bench to the wall	300.00
10	Lakeshore Park Totem Pole	- Remove rotten wood at base of the totem pole & apply appropriate preservative	2,000.00
		- Re-grout below the base of the structure	1,000.00
		- Repair concrete below the base of the monument	1,200.00
11	Boy Scout Monument	- Remove moss and fungus	100.00
		- Apply concrete penetrating sealant to monuments	600.00
12	Surveyor's Park	- Epoxy inject cracks in concrete walls	8,000.00
13	Candy Cane Park Structures	- Clean retaining wall and seal with penetrating sealer	400.00
		- Epoxy inject cracks, and repair concrete	2,000.00
		- Remove and replace rotten timbers in retaining wall	1,500.00
		- Apply wood treatment to retaining wall	500.00
14	Four Seasons Sculpture	- None	
15	Waterfowl Park Display Pond	- Replace missing shingles	500.00
16	Ducks Unlimited Monument	- Apply concrete penetrating sealer to monuments	200.00
17	Mind's Garden	- None	0.00
18	Firehouse Elements Sculpture	- Add three new pile caps	300.00
		- Drill holes at the base of each leg to release water	100.00
TOTAL ESTIMATED STRUCTURAL UPGRADES			\$90,600.00

* Considered urgent for budget purposes

4.5 ART FEATURES

Photos of art features can be found in Appendix C. The assessment of the art features is summarized below. The entire assessment can be found in Appendix E.

Area 2 - Wascana Headland

5 Oskana

Description

- granite, bronze

Condition

- Stones: generally in good condition; some biological buildup and cracking.
- Skulls: patination is very dark black; large amount of grass and tree material on skulls; a few areas of green corrosion on center skull
- Central support structure: generally in good condition; minor cracks and some loss of stone.

Comments

- There is a sprinkler head located between the rocks and the central sculptural element on the north side. This likely sprays water directly on sculpture.

Recommendations

- Stones: Clean algal growth from stones.
- Central Support Structure: The center of the structure is in a depression, causing water to pool under the stone. The grade should be raised.
- Careful cleaning by a conservator is recommended.

Area 3 - Legislative Grounds

10 Lakeshore Park Totem Pole

Description

- western red cedar, paint, bolts; 95 cm (37.5 inches) diameter at base

Condition

- Cracks: Numerous vertical cracks overall; largest crack is 133cm long, 3cm wide and depth of 31.5cm
- Wood Loss: Area of rot and wood loss at back just above head
- Accretions: Some grime overall; Dirt, elm seeds, etc. are building up in cracks.
- Hole/gouge: Cause unknown, but looks fresh
- Graffiti: Numerous areas of graffiti where people have scratched into the wood surface.
- Paint: In general the white paint is in the poorest condition, appears brittle and is cracked and lifted or peeling and flaking off,
- Overpaint: There is evidence of several layers of paint that are not necessarily the same as the top-most layer implying that the overpaint was not the same as the original. According to WCA personnel, the totem pole has been repainted in the past.
- Rot: Three areas of checked wood and rot at back of base of bird and severe at top of back of head; some at wing and at bolt hole in head.

- Checking and Rot: At the top of the knees of the Thunderbird and bird's head
- Stains: Rust colored stains below "L" bracket on wing attachment.

Recommendations

- An experienced totem pole conservator should be engaged to do further examination and tests, and then to carry out a corrective treatment and prepare a plan for future maintenance.
- Reduce access to the pole to reduce future defacing.

11 Boy Scout Monument

Condition - Large Central Structure

- Granite plaque: Generally good condition; some scratches
- Aggregate concrete support for plaque: cracking from edge to centre
- Concrete support structure at base: some erosion of face of concrete
- Metal plate vents: corroded/rusty. One plate is missing. \

Condition - Boy Scout Attribute Pedestals

- All stone plaques: good condition; scratches, gouges, chips; uneven mortar
- Stone support structure: some stone loss, biological growth, and cracks; some discoloured concrete repair.

Recommendations – Large Central Structure

- Repair electrical vents.
- Losses on the cement base should be filled with appropriate media, once the cause of decay is eliminated.

Recommendations - Boy Scout Attribute Pedestals

- The biological growth and general grime should be carefully removed with the assistance of a conservator.
- The caulking should be removed and replaced on many of the plaques.
- Losses should be filled with quartz/tinted concrete mixture.

Area 5 - Performing Arts Centre

14 Four Seasons

Description

- Abstract sculpture constructed from weathering steel welded together.

Condition

- The base is set directly onto the ground with some portions sunk into the dirt.
- Some accretions.
- The patination is fairly even on exterior surfaces, except both sides of one panel. It appears that rust has been chemically removed from this one panel, possibly during anti-graffiti activity.
- Graffiti apparent.

Recommendations

- Sculpture should be carefully cleaned and a regular maintenance program should be prepared.
- All flat surfaces should be checked and sealed with appropriate materials.
- The graffiti removal caused unsightly round large areas of uneven patination on either side of one panel. An investigation should be undertaken to determine how and when rust was removed. If it was done recently, the sculpture could be monitored over the next two years. It is hopeful, that the protective rust layers would build up again and reintegrate with the rest of the panel, although unclear, because the paint remains and the chemical used may have altered that portion.
- Alternatively, the entire side could be blasted to stimulate new visually homogeneous rust over the whole surface. Of course, each time this process is utilized, more of the surface is lost and it would also take time to build up.

Area 7 - University of Regina and Research Park

17 Mind's Garden

Description

- large circular structure constructed from 16 panels of bronze.

Condition

- Sculpture: generally good condition; areas of corrosion
- Structurally, it is in excellent condition.
- The bronze has been waxed twice in the past to provide extra protection; however, the weather pattern in this location has caused blanching of the wax on all walls.
- Evidence of strong accretions near base causing some discoloring/corrosion .
- There are numerous gopher holes on the east side.
- Central Brass Plaque: Set directly into the ground at the center of interior of the structure. Plaque has overall green corrosion

Recommendations:

- Sculpture: Requires cleaning and ongoing waxing.
- Plaque: Consider: mounting the plaque more appropriately – raised above grade and provide positive drainage sculpture; cleaning, repatinating and coating; Providing a gravel buffer zone around plaque; Repairing gopher holes and deterring future gopher damage.

18 Firehouse Elements

Description

- Base: Two ladder-like supports at either end with support platform between constructed from weathering steel; Structures: constructed of brushed steel are bolted to the support structure.

Condition

- Steel Base: Cracking, splitting of steel and active corrosion; rust
- Steel Structures: some dents, some biological growth, graffiti and gouges.

Comments

- The weathering steel base sits on floor concrete platforms, three of which are roughly circular and one square. The three circular look in poor shape, and overall this method detracts greatly from the aesthetic appreciation of the piece.

Recommendations

- Fabricate new rectangular plinth for the piece to sit on and the four disfigured pieces removed; Repair split steel; clean and grind out graffiti.

4.5.1 UPGRADE COSTS

ID #	Art Feature	Recommendation	Estimated Cost
5	Oskana	- cleaning	\$450.00
10	Lakeshore Park Totem Pole **	- overall conservation treatment	\$16,000.00
11	Boy Scout Monument	- cleaning, caulking, structural repair, and stone conservation	\$8,000.00
14	Four Seasons Sculpture	- Cleaning	\$1,350.00
17	Mind's Garden *	- cleaning and waxing	\$3,700.00
18	Firehouse Elements Sculpture *	- Replace split steel	\$1,500.00
TOTAL ESTIMATED ART FEATURE UPGRADES			\$25,800.00

Art features noted with an asterisk (*) are owned by the City of Regina or the University, therefore Wascana Centre is not responsible for their maintenance and their upgrades are not included in the total.

** Considered urgent for budget purposes.

4.6 PLAY STRUCTURES

4.6.1 WASCANA PLAYGROUND (AREA 1)

Blue Swings

Deficiencies

- Lack of friction reducing swing hangers - CSA Standards Section 15.6.2.4
- Trees east of swings are 4.6 metres (15 feet) and 3.0 metres (10 feet) from center of swings. CSA Standards Section 14.4.1.1 requires 6.1 metres (20 feet) of safety surfacing out from center of swing having a center beam 3.0 metres (10 feet) above swing seats plus an additional 1.8 metres (6 feet) of non-encroachment zone (object free) (Class A Hazard Requires immediate Removal)

Red Slide

Deficiencies:

- Lack of starting platform - CSA Standards Section 15.5.4
- Side walls do not comply with - CSA Standards Section 15.5.5.6
- String entanglement at beginning of slide (Class A Hazard Requires immediate Removal)

Teeter Totter

Deficiencies:

- No deficiencies, the equipment can remain

Climbers & Spring Toy

Deficiencies:

- No deficiencies, the equipment can remain

Backhoe

Deficiencies:

- Crush points on hinged parts - CSA Standards Section 12.5

Swing

Deficiencies

- Lack of friction reducing swing hangers - CSA Standards Section 15.6.2.4

Big Toys Structure (circa 1980)

Deficiencies:

- Structure has elevated play surfaces (larger than 4 square inches) on the posts - CSA standards Section 15.18
- Slide is lacking starting platform - CSA standards Section 15.5.4

The structure was manufactured prior to CSA Standards being introduced. It cannot be made compliant.

Recommendations

The safety surfacing requires loosening and topping up where there is less than 30 cm (12 inches) of surfacing.

The majority of the equipment needs to be removed, with the exception of the climbers, spring toys, and teeter totter. The teeter totters while being CSA compliant are made of wood and their useful life is limited. The climbers are CSA compliant but are small and do not accommodate many children.

Removing all equipment will provide a site that is free from encumbrances and allow a new design to be completed. The aesthetics of adding new equipment will be greatly reduced if the old climbers and teeter totters were to remain.

4.6.2 CANDY CANE PARK PLAY AREA (AREA 4)

Candy Cane Town Structure

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12" brought up to the required 12" level - CSA Standards Section 10

Candy Cane Town

Deficiencies:

- No comments

Treasure Tumble

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12" brought up to the required 12" level - CSA Standard Section 10

Tire Swing

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12" brought up to the required 12" level - CSA Standard Section 10

Glide Ride

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12" brought up to the required 12" level - CSA Standards Section 10

Climber

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12" brought up to the required 12" level - CSA Standards Section 10

Spring Toys

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12" brought up to the required 12" level - CSA Standards Section 10

Spinner

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12" brought up to the required 12" level - CSA Standards Section 10

Climbing Walls

Deficiencies:

- Missing Manufacturer Identification - CSA Standards Section 16
- Indication of Intended Age Group - CSA Standards Section 16

- Protective surfacing requires loosening with a machine and areas with less than 12” brought up to the required 12” level - CSA Standards Section 10

Climbing Mountain

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12” brought up to the required 12” level - CSA Standards Section 10

Xccent Play

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12” brought up to the required 12” level - CSA Standards Section 10

Backhoe

Deficiencies:

- The accessible backhoe meets the CSA requirements, however, the non-accessible backhoe appears to have been repaired by a non-standard bolt allowing a possible crush point on hinged parts - CSA Standards Section 12.5. This should be repaired properly.
- Protective surfacing requires loosening with a machine and areas with less than 12” brought up to the required 12” level - CSA Standards Section 10

Swings

Deficiencies:

- Protective surfacing requires loosening with a machine and areas with less than 12” brought up to the required 12” level - CSA Standards Section 10
- Structure has elevated play surfaces (larger than 4 square inches) on the posts - CSA Standards Section 15.18

Recommendations

Most equipment can remain with the repair and treatment of safety surface noted above. The swings should be removed as they are identified as hazards in the CSA regulations.

The vertical wood posts adjacent to the play surface are beginning to deteriorate and split and are becoming unsafe. In addition they provide an elevated play surface immediately to a concrete surface.

4.6.3 UPGRADE COSTS

WASCANA PLAYGROUND Recommendation	Estimated Cost
Site Demolition	\$10,000.00
Play Equipment	\$150,00.00
Equipment Installation	\$40,000.00

Safety Surface Replacement w/ drainage tile	\$50,000.00
Concrete Header	\$25,000.00
TOTAL ESTIMATED WASCANA PLAYGROUND UPGRADES	\$275,000.00

The above estimate for play equipment anticipates replacement of the existing pieces with similar pieces as follows: small play structure (2-5 years); large play structure (5-12 years); independent slide; spring toy (4); net climber; and independent climber (2). It doesn't anticipate any major feature upgrades to the play ground, such as an accessible play structure, or rubberized surfacing.

CANDY CANE PARK Recommendation	Estimated Cost
Top up and Loosen Sand Safety Surface	\$6,500.00
Swing Removal and Replacement (2)	\$9,000.00
Replace Timber Border with Concrete	\$2,600.00
Park Safety and Age Signage	\$1,000.00
TOTAL ESTIMATED CANDY CANE PARK UPGRADES	\$19,100.00

5. BUDGET SUMMARY

Budget estimation based on landscape assessment provides guidelines for further consideration. The landscape development recommendations described in the assessment report are derived from a broad scale assessment of the WCA grounds, using quantity estimates taken from existing drawing information and field estimates. As such, development of individual landscape upgrade projects will refine actual budget costs. This level of cost estimation should, therefore, be viewed in a similar manner. Additionally, budget estimates assume each intervention will be undertaken as individual tasks. Cost savings are expected when related tasks are undertaken at the same time; i.e. weeding, pruning and mulching for shrub beds could take place at the same time. In addition, costs provided are expected contractor costs. Costs may differ if implementation of upgrades was undertaken by Wascana Centre personnel.

Of necessity, many assumptions have been made on which to base these cost estimates. These assumptions may or may not hold true as project development and implementation proceeds. Figures are consultant opinion of probable contractor costs (2012 dollars) based on the Landscape Assessment carried out during the summer of 2012.

Budget costs exclude:

- Design fees;
- GST, which we understand to be net 0%;
- Detailed investigations;
- Direct charges from utilities companies;
- And other interventions not noted.

ITEM	Estimated Cost – Urgent	Estimated Cost – Total
LANDSCAPE	\$4,999,039.00	\$11,370,325.00
20% design contingency	999,808.00	2,274,065.00
5% construction contingency	249,952.00	568,516.00
15% design fees	749,856.00	1,705,549.00
LANDSCAPE SUBTOTAL	6,998,655.00	15,918,455.00
IRRIGATION	\$3,995,156.00	\$3,995,156.00
20% design contingency	799,031.00	799,031.00
5% construction contingency	199,758.00	199,758.00
15% design fees	599,273.00	599,273.00
IRRIGATION SUBTOTAL	5,593,218.00	5,593,218.00
STRUCTURES	\$58,000.00	\$90,600.00
20% design contingency	11,600.00	18,120.00
5% construction contingency	2,900.00	4,530.00

15% design fees	8,700.00	13,590.00
STRUCTURE SUBTOTAL	81,200.00	126,840.00
ART FEATURES	\$16,000.00	\$25,800.00
20% design contingency	3,200.00	5,160.00
5% construction contingency	800.00	1,290.00
15% design fees	2,400.00	3,870.00
ART FEATURE SUBTOTAL	22,400.00	36,120.00
PLAYGROUND STRUCTURES	\$294,100.00	\$294,100.00
20% design contingency	58,820.00	58,820.00
5% construction contingency	14,705.00	14,705.00
15% design fees	44,115.00	44,115.00
PLAYGROUND SUBTOTAL	411,740.00	411,740.00
TOTAL ESTIMATED LANDSCAPE UPGRADES	\$13,107,213.00	\$22,086,373.00

6. CONCLUSION

As a part of Wascana Centre Authority's 50 year anniversary celebration the landscape assessment creates a picture of the current state of all landscape elements within the park. The landscape data collected will inform the development of Wascana Centre's overall vision for next 50 years. Through the thorough, systematic and objective application of assessment criteria, the consulting team has completed a review of landscape elements including trees, shrubs, turf, sports fields, site furniture, irrigation, landscape structures and monuments, two play structures, and select art features. The review has identified elements that require upgrading or repairs to bring them to an acceptable level. The costs for these required upgrades have been estimated and summarized and provide Wascana Centre Authority with a good basis for prioritizing where efforts and funds should be directed.

The method of landscape data collection employed has resulted in a large database of asset data, which can be easily updated as repairs and upgrades occur. In addition, each data collection point is geolocated in ArcGIS and, should Wascana Centre pursue using a GIS-based infrastructure management tool, will allow Wascana personnel to analyze and map current assets and their condition. In addition, the assessment criteria and method of data collection allow Wascana centre to track changes in asset condition as repairs / upgrades are prioritized for funding. The methods employed are entirely repeatable and Wascana Centre could implement a regular assessment program as part of their maintenance operations in order that landscape assets remain at an acceptable level into the next 50 years.

APPENDIX A – LANDSCAPE PHOTOS

Turf



Good Condition: Good ground cover with few weeds.



Problem: Pedestrian and vehicle wear beside narrow pathways.



Problem: Ground squirrel holes.



Problem: Patchy grass underneath trees.

Trees	
	
Good Condition: Smaller tree beds with mulch.	Good Condition: Turf ground cover under trees.
	
Problem: Spider mites in spruce trees.	Problem: Major limbs have been pruned resulting in deformed tree habit. Replacement of tree is required.
	
Problem: Large expanses of Rototilled tree beds.	

Shrubs



Good Condition: Small to medium sized shrubs have been selected. Shrub habit is dense and compact. Diversity of shrub species throughout beds. Bed has mulch ground cover.



Good Condition: Shrub species retain a full and dense form when mature and overgrown.



Problem: Long and leggy Honeysuckle with no growth at base.



Problem: Overgrown shrubs exceeding shrub beds affect mowing.



Problem: Long and leggy Caragana in a Rototilled bed.

Naturalized Area



Good Condition: Established native plant species, including Willow, along the shoreline. Self propagation of native plant species is prevalent. Few weedy plants present.



Good Condition: Good ground cover of dryland grass with few weeds



Problem: Infestations of Canada thistle.



Problem: Caragana invading the shoreline and choking out native species.

APPENDIX B - STRUCTURAL PHOTOS

Area 1- South of College Ave	
#1 Haultin, Ross, Darin & Dunning Monument	
	
Photo 1: Monument	Photo 2: Typical Mortar and Masonry Condition
	
Photo 3: Cracking in the Capstone	Photo 4: Cracked Concrete Footing
#2 Speaker's Corner	
	
Photo 1: Speakers Corner Looking North	Photo 2: Speakers Corner Looking North



Photo 3: North-west Wall Leaning Outwards



Photo 4: Cracks in North-east Wall



Photo 5: Cracks in North-east Wall





Photo 6: Deterioration of Brick on North-east Wall





Photo 7: Deteriorated Stairs



Photo 8: East Tyndall Stone Monument

	
<p>Photo 9: Offset Stone on West Monument</p>	<p>Photo 10: Cracked Stone and Mortar Deterioration in West Monument</p>

#3 Regina Boat Club Monument

	
<p>Photo 1: Regina Boat Club Monument</p>	<p>Photo 2: Regina Boat Club Monument</p>

#4 Wascana Playground

	
<p>Photo 1: Structure</p>	<p>Photo 2: Checking in Timber Support</p>



Photo 3: Concrete Slab below Structure

Area 2- Wascana Headland

#5 Oskana



Photo 1: Oskana



Photo 2: Bronzed Bison Skulls on Tyndall Stone



Photo 3: Typical Granite Stone

#6 Lady Slipper Courtyard Structures



Photo 1: Gazebo



Photo 2: North Steel Gate



Photo 3: East Steel Gate



Photo 4: Perimeter Steel Fence



Photo 5: Peeling Paint and Corrosion on Fence

Area 3- Legislative Grounds

#7 Saskatchewan War Memorial



Photo 1: Saskatchewan War Memorial



Photo 2: South Monuments



Photo 3: North Monuments and Flagpole Monument



Photo 4: Loose Mortar and weathered Sandstone at base of Monument



Photo 5: Deteriorated Concrete at North Monuments



Photo 6: Blackened Surfaces of Tyndall Stone



Photo 7: Green Stains in the mortar joints on the South Monument



Photo 8: Broken Corner at the base of South Monuments

#8 Saluting Monument



Photo 1: Saluting Monument



Photo 2: Sprawling concrete on center monument



Photo 3: Crack on the top of center monument

#9 Ross Thatcher Monument



Photo 1: Monument Looking West



Photo 2: Monument- Looking East

#10 Lakeshore Totem Pole



Photo 1: Totem Pole



Photo 2: Precast Monument



Photo 3: Shrinkage Cracks in the Totem Pole



Photo 4: Missing Grout below the Totem Pole



Photo 5: Rotten Wood at the Base of the Totem Pole

#11 Boy Scout Monument



Photo 1: Boy Scout Monument



Photo 2: Typical Vegetation Growth



Photo 3: Broken Edges

#12 Surveyor's Monument	
	
Photo 1: Surveyor's Monument	Photo 2: Typical Crack Size in Wall
	
Photo 3: Crack above Pile on West Wall	
Area 4- Family Parkland	
#13 Candy Cane Park Structures	
	
Photo 1: Candy Cane Monument on West End	Photo 2: Candy Cane Monument on East End



Photo 3: Concrete Retaining Wall



Photo 4: Timber Retaining Wall



Photo 5: Damaged Concrete on West end of Concrete Retaining Wall

Area 5- Performing Arts Centre

#14 "Four Seasons"



Photo 1: Four Seasons Sculpture



Photo 2: Four Seasons Sculpture

#15 Waterfowl Park Display Ponds



Photo 1: Display Structure- Looking North



Photo 2: Display Structure- Looking Southwest

Area 6- Douglas Park

#16 Ducks Unlimited Monument



Photo 1: Ducks Unlimited Monument



Photo 2: South Monument



Photo 3: North Monument

Area 7- University of Regina and Research Park

#17 “Mind’s Garden”



Photo 1: Mind’s Garden

Photo 2: Connection to Footing



Photo 3: Welded Connections at each Panel

#18 “ Firehouse Elements”



Photo 1: Firehouse Elements Sculpture

Photo 2: Firehouse Elements Sculpture



Photo 3: Split Leg in Steel Support

APPENDIX C - ART FEATURES

Area 2- Wascana Headlands

#5 Oskana



Example of patination discolouration, accretions and grass debris



Stone 6 example of red iron rust stains

Area 3- Legislative Grounds

#10 Lakeshore Park Totem Pole



Wood rot on top of the head of the Totem Pole



Large cracks running down the Totem Pole

#11 Boy Scout Monument



Rusted/corroded metal plates on base of main structure



Kind structure example of biological growth

Area 5- Performing Arts Centre

#14 "Four Seasons"



Damage to material from graffiti removal.



Uneven weathering on underside of sculpture.

Area 7- University of Regina and Research Park

#17 Mind's Garden



Example of copper malachite corrosion (green colouration) on the surrounding panels.



Corrosion and discolouration of central plaque.

#18 Firehouse Elements



Dented center structure



Example of scratches on structure surfaces

APPENDIX D – PLAYGROUND STRUCTURES

Area 1- South of College Ave Wascana Park Playground	
	
Blue Swings: trees too close to swing set	Red Slide: Lack of starting platform
	
Red Slide: String entanglement	Teeter Totter: wood is getting old
	
Climbers and Spring Toy: small and do not accommodate many children	Back Hoe: Crush points on hinged parts



Swing



Big Toys (circa 1980): elevated play surfaces

Area 4- Family Parkland

Candy Cane Park Play Area



Candy Cane Town Structure



Candy Cane Town



Treasure Tumble



Tire Swing



Glide Ride



Climber



Spring Toys



Spinner



Climbing Walls



Climbing Mountain



Xccent Play



Back Hoe: Crush points on hinged parts



Swings: Elevated play surfaces



Post border: creates an elevated play surface



Post border



MACKENZIE ART GALLERY
3475 Albert Street
Regina, Saskatchewan
S4S 6X6
Conservation
tel. (306) 584-4287 / fax. 569-8191
CONDITION REPORT

APPENDIX E- ART ASSESSMENT

Area 2 - Wascana Headland

5 Oskana

Owner/ Client: Wascana Centre Authority

Artist: Doug Hunter

Title: Oksana

Medium: Granite, bronze; *Date:* 1989

Condition- Stones

- Outlying large stones are identified for the purposes of this condition report by sequential numbers 1-6, with No. 1 lying closest to the WCA building (in line with Legislative Building). Sequential numbers are made going clockwise.

Stone No. 1:

- Generally in good condition
- Horizontal hairline crack on east side
- White biological growth west side
- Spots of bird excrement

Stone No. 2:

- Generally in good condition
- Some fine cracking on face
- Dirt build-up on base
- Iron staining (inherent)

Stone No. 3:

- Sprinkler head between Stone No. 3 and sculptural forms @ center
- Generally in good condition
- Spots of orange/rust colored lichen
- Minor black biological growth
- Brown marks on back

Stone No. 4:

- Generally in good condition
- Spots of orange/rust colored lichen
- Spot of bird excrement on top

Stone No. 5:

- Generally in good condition
- Numerous hairline cracks
- Spots of orange/rust colored lichen
- Limestone/sedimentary deposits on verso (inherent)

Stone No. 6:

- Generally in good condition
- Red iron rust stains overall surface
- Minor hairline (natural) cracks

Condition- Central support structure with bison skulls

Skulls:

- Patination of the bronze has turned to a very dark black coloration overall
- A large amount of grass and tree debris on skulls (from leaf blower?)
- Accretions: bright yellow (bird excrement? Urine?) on some skulls
- Some acidic or alkaline accretions have affected the patination
- A few areas of green corrosion (malachite?) on center skull

Central support structure:

- Generally in good condition
- Lies in a depression
- Some minor cracks on stone of base structure
- Some green stains from leached copper (from bison skulls) on stone, especially south side
- Some loss of stone

Comments

- There is a sprinkler head located between the rocks and the central sculptural element (bison skulls) on the north side. I wasn't able to catch it in action, but assume this creates direct spray of water on the sculpture every time the grass is watered.

Recommendations

Stones:

- Generally the stones are in excellent condition. Clean algae growth from stones although not as necessary as for the Boy Scout Monument.

Central Support Structure:

- In general the whole sculpture lies on an area of great drainage due to general slope of land. However, the center of the structure where the central support structure with bison skulls is a depression, causing water to pool under the stone. I would recommend that this whole area be raised. Additionally, I would recommend a small buffering area of possibly sand/gravel around the stone so that the lawn caretakers wouldn't have to weed wack right up to the sculpture throwing grass into crevices etc. of the bronzes – which in turn causes moisture retention etc.
- Insofar as the bronzes are concerned – waxing would help reduce the effect of contaminants; however, the wax will blanch over time, and the way they are mounted would make it very difficult to ensure even application and removal etc. They are in a fairly stable form of corrosion right now, with black patina, so I would Not Recommend waxing.
- I would recommend having a conservator do some cleaning of them – both gentle cleaning and tests for safe removal of excrement without affecting the patina.

Area 3 - Legislative Grounds

10 Lakeshore Park Totem Pole

Owner/Client: Wascana Centre Authority

Artist: Lloyd Wadhams

Title: ?

Medium: Western red Cedar, paint, bolts

Dimensions: 37.5" Diameter @ base (differs from measurements given)

Condition

Generally in fair (?) condition

All measurements in centimeters

Cracks:

Numerous vertical cracks overall; the most notable are listed below

- Large vertical crack/split (133 cm) @ front PL side with some rot and debris in interior
 - The crack is ca. 3 cm wide near the base with a depth of 31.5, but a further depth of 5 cm. due to rot (36.5)
 - The crack stays at about 3 cm wide @ 40 bottom, but depth is 41 cm
 - @ 56B, the depth is 46 cm
 - @ 73B the depth is 16 cm
 - @ 86B the depth is 20 cm with 3.5 cm of rot
- Numerous other crack/splits 0-.5 cm in width; 0-6.5 cm in depth
- Long crack PR side 1 cm in width @ base; 0-178 bottom, potentially to 193B; deeper than 26 cm in depth (unable to access deeper)
- Crack at the back of face/head (tray shaped), with rotten wood to a 4.7 cm depth @ 201B; and a large area of wood loss
 - Cracks go around head (quite deep @ top of head) – do not meet at bottom with some rot
 - Numerous cracks in figure
 - Cracks and rot between head and wings

Wood Loss:

- Area of rot and wood loss at back just above head

Accretions:

- Some grime overall
- Buildup of dirt, elm seeds, etc. are caught in the cracks.
- back of PR shoulder, in black paint

Hole/gouge:

- Cause unknown, but looks fresh @ 109-115B (see photo)
- Green biological growth in white paint
- Some rot in crack (depth 5 cm)

Graffiti:

- There are numerous areas of graffiti overall (too numerous to mention) which have been scratched into the surface over time, and repainted. The majority are scratched initials of peoples' names.

Paint:

- In general the white paint is in the poorest condition, appears brittle and is cracked and lifted or peeling and flaking off,

Over paint:

- There are areas in the yellow/orange paint of loss which reveal an underlying yellow which is different in tone. It is unclear, however, whether this is the original paint or not.
- I have been informed by WCA that the totem pole has been repainted in the past. I do not know specifically how much has been repainted or how many times. There are areas of loss in white paint which show underlying green paint.
- It is also evident from a few photo samples of when it was being installed and early installation that the paint was different and more intricate in some areas.
- It would require paint samples to be taken of the various areas, and tested for type of paint, and pigments etc.

Rot:

- 3 areas of checked wood and rot at back of base of Figure 1 (bird) and severe @ top of back of head
- Wood rotted in the junction of the wing with body of bird @ front left side
- There is some rot visible all around the base.
- There is rot in the bolt hole in the back of the head with lichen/moss growing in the hole/rotted wood.
- Bolt hole at back is rotted with fresh looking sawdust within.

Checking and Rot:

- At the top of the knees of the Thunderbird (?) the end grain is cracked/checked with some rot.
- At the top of the birds head the end grain is checked and deeply rotted (over 26 cm deep) with lots of wood loss
- Most of the paint is lost from these areas.

The paint on the wings is in fairly good condition on the proper right wing, but peeling on the proper left wing

Stains:

- Rust colored stains below “L” bracket (rusted steel) on wing attachment.

Comments:

- It is evident from early photographs that elements of the original totem are missing (see head of Figure 1/Thunderbird in installation photos). In addition, it is apparent that during the many over paint sessions which have taken place over the years, some elements of the original design have been lost or repainted in different colors.
- There are numerous cracks overall, which is natural, over the course of time; however, some of this could have been avoided/reduced by capping the end grain in some areas, such as the top of the head, knees of the Thunderbird, etc. Some of the cracks are quite wide and deep, with rot in the interior which could be related to the interior steel pole.
- There is some rotting at the base; however, the installation was well planned with drainage going away from the base.
- There has been a very large amount of graffiti over the years which is still evident with over paint.

Recommendations:

- I strongly recommend that an experience totem pole conservator be brought in to do further examination and tests (moisture levels in interior, rot, paint samples,

- etc.), and then to proceed with a correct treatment and layout for future maintenance.
- I would also recommend that some thought be given to deterrents/reduction of access to the pole, to reduce future defacing (totem pole conservator may already have knowledge of proven methods that may be compatible with this site location)

11 Boy Scout Monument

Owner/ Client: Wascana Centre Authority

Title: Boy Scout Tribute

Medium: Granite, Aggregate, Cement, Caulking, Metal, Wiring

Condition- Large Central Structure:

Granite plaque:

- Generally good condition
- Surface scratches on granite stone plaque @ center

Aggregate concrete support for plaque:

- Concrete support structure experiencing some cracking from edge to center @ 3:00 o'clock, 6 o'clock and 9 o'clock; the crack @ 3 and 9 o'clock are possibly one crack that continues beneath the central crack.
- Chipping tip of edge @ 1 o'clock

Concrete support structure @ base:

- Some erosion of face of concrete
- Surface appears dark – possible issues with damp (which correlate to rusting of plates – see below)

Underlying steel metal plate vents:

- All are quite corroded/ rusty. One plate is missing and shows broken electrical connections in interior. Purpose unknown.

Outlying Structures- Boy Scout Attribute Pedestals

Obedient:

Stone plaque in good condition

- Minor scratches, no chips
- Loss and cracking of mortar/caulking around plaque provide space for collection of debris and moisture – could lead to further damage in future (e.g. ice and freeze thaw cycles causing cracks and loss of structure evident on some of the other structures.

Stone supporting structure in good condition,

- No losses or cracks
- Accretions:
 - Black biological growth scattered; orange lichen @ top

Cheerful:

Stone plaque in good condition

- The mortar (sanded caulking/sealant) was not cleanly applied around the plaque and is smeared into the surrounding structure.

Stone supporting structure

- Losses:
 - Stone @ 0B/36R @ front base edge

- A few stones PL edge @ 23 and 30B (?)
- Accretions:
 - Crumbly (in appearance) grey biological growth PL side
 - Old repair on back; doesn't match surrounding structure

Loyal:

Stone plaque generally in good condition

- Some mortar around plaque

Stone supporting structure

- Accretions:
 - A few spots of rust colored lichen
 - A few areas of bird excrement on top face

Helpful:

Stone plaque generally in good condition

- A few minor scratches scattered
- Uneven mortar around plaque

Stone supporting structure

- Accretions:
 - Black grimy appearance from some type of biological growth
- No losses
- Cracks:
 - No readily apparent cracks in body
 - Cracking of cement at junction with stone/mortar mix -
 - PR front and side
 - Cracking/no mortar on front face 0-12T/20-30L

Brotherly:

Stone plaque generally in good condition

- Scratch:
 - Small scratch @ 2T/7L (upper left)
 - Small scratch 3T/15.5L
 - A few minor scratches @ bottom right
- Chip:
 - Small chip 0T/32L and 0B/3R

Stone supporting structure:

- Green moss growing @ base @ PR side
- Cracks:
 - Cracking of cement @ junction with stone/mortar mix – on back
- Loss:
 - Small loss @ front, base @ PL corner

Courteous:

Stone plaque generally in good condition

- Scratches:
 - A few minor scratches, see especially above “U”, and below “R”
 - Shallow gouges/pitting – 4 x 5 cm zone @ 6B/6R
- Accretions:
 - Bird excrement top of plaque
 - Mortar/caulking around plaque is intermittent; also some extant on front face near top of stone supporting structure *increases vulnerability of water seepage, freezing, expansion and cracking of stone
- Stone supporting structure:
- Some cracking around plaque

- Cracking between cement and stone junction PL and @ back

Kind:

Stone plaque

- Scratches:
 - Large 8 x 8 cm "M" scratched into surface
 - White scratch in letter "K" @ 6B/23L
- Cracks: 0T/10L, 0T/5L
- Gouges/pitting: 2T/20R
- Rubs/scratch: 5 x 5 cm zone @ top right corner

Stone supporting structure

- Losses:
 - Small loss of stones @ PL top front corner and PR back corner
- Old repair:
 - Area of discolored (tan) old consolidation repair visible PL side, and @ top back
- Cracks:
 - Cracking between juncture of cement and stone supporting structure on left side
 - Cracks @ PL top edge @ back
- Accretions
 - Gray biological growth; rust colored lichen scattered

Thrifty:

Stone plaque

- Scratch:
 - Notable scratch on left of "F? R?" 5 x 9 cm
 - Other minor scratches
- Chips:
 - Small chip top left corner
 - Stone supporting structure
- Generally poor condition
- Losses:
 - Large loss @ top, PR adjacent to stone plaque with cracking and danger of further loss
 - Small stone losses PR front corner @ base
- Rust colored (iron?) staining below area of loss
- Old repairs:
 - Foamy looking old repairs in area of staining PR side; and on back
 - (Attempts to consolidate)
 - Weathered consolidant front area @ top surface with cracks
- Cracks:
 - Numerous further hairline cracks left side

Clean:

Stone plaque:

- Small gouges/pitting:
 - Left side 10 x 6 cm zone
- Scratches:
 - Minor scratches overall
 - 4 cm surface scratch below "C"
- Mortar/caulking around plaque and smeared into surrounding surface @ top

Stone supporting structure:

- Losses:

- Stone loss @ proper left side near front @ base
- Stone loss @ center of front side @ base
- Old repair:
 - Discolored consolidant adjacent to plaque @ top left
- Back and left side of supporting structure are fairly clean in appearance (devoid of biological growth)
- Cement pad appears partially missing @ proper left front

Trustworthy:

Stone Plaque generally in good condition

- Chips:
 - Small chip @ 0B/13.5R
- Scratches:
 - 6B/0R
 - Long scratch 26 cm in length @ upper right

Stone Supporting Structure:

- Accretions:
 - Orange lichen and black biological growth all sides
- Cracks:
 - No readily apparent cracking
 - Cracking in junction between cement base and stone supporting structure left side, front half; and front side, left half

Leafy debris around all bases

Sidewalk:

- Generally in good condition
- Some thin cracks radiating from center structure
- Rust colored staining around center (adjacent to metal plating at base of central structure)
- Dark discoloration near base south half
- Generally grimy

Comments

- In my most recent visit to the site, I observed a tree branch has been cut (beside "Clean") which is now causing sap to weep on the monument.
- Trees/bushes should be maintained far enough away from the sculpture that they do not impinge or cause damage.

Recommendations

- The large central structure needs to be examined in further detail. The original drawings should be accessed which explain the purpose of the vents, and electrical system within its interior. As the vents are quite corroded and the cement base exfoliating, something isn't functioning the way it should. The missing vent needs to be replaced and the electrical system repaired. Currently, it presents a potential danger to visitors. The crack which extends across the top of this structure may be causally related to the underlying problems.
- Losses on the cement base should be filled with appropriate media, once the cause of decay is eliminated.
- The surrounding sidewalk could be power washed at low pressure to remove some of the grime buildup.

Recommendations- Boy Scout Attribute Pedestals

- The biological growth and general grime should be removed. Methods of removal should be explored and tested. A moderately stiff brush will remove quite a bit, but not all. There may be products that can be used to kill/remove the algae, etc. and then rinsed/dried and brushed off, but again, these should be researched, relative to their effect on the cement matrix before being put to general use. A lower PSI power wash, might be an alternative, although it may still find its way into cracks.
- The caulking should be redone on many of the plaques to ensure no water infiltration. (Old caulking should be removed wherever possibly, and new caulking neatly spread on. Care should be taken to ensure new caulking is same medium as the old caulking to ensure compatibility).
- Losses should be filled with quartz/tinted concrete mixture – ensuring that new concrete is compatible with old (same medium) and quartz is of same size as old. (if no records, have old concrete matrix analysed)

Area 5 - Performing Arts Centre

14 Four Seasons

Owner/ Client: Wascana Centre Authority

Artist: Doug Bentham

Title: Four Seasons

Medium: Weathering Steel

Description

- Abstract sculpture constructed from various shapes of weathering steel welded together. The sculpture is situated near the corner of Broad Street and Parkshore Drive (east side)

Condition

All measurements in centimeters

- The base is set directly onto the ground with some portions sunk into the dirt.
- There is bird excrement on some panels.
- There are animal droppings on the upper levels of the sculpture, and a dead rabbit carcass on the ground on the north side as well as numerous gopher holes.
- The patination is fairly even on exterior surfaces, except both sides of one panel. This panel has large areas on either side, which seem to have been stripped of the protective rust layer. It almost appears to have had some type of chemical applied which partially removed paint (pink and grey?), but also affected the rust. I do not have information as to the cause, but would hazard a guess that someone (maintenance?) was trying to remove graffiti without knowledge of how the weathering steel would respond to the chosen methods. It's unlikely any testing was performed, prior to the application. Unfortunately, these two areas are very disfiguring at the moment.
- The interior of the sculpture is more unevenly rusted. This is inherent. The steel cannot go through the same type of wet/dry cycles as the exterior, and the wet cycle lasts longer on the interior. Some flat surfaces have a much more active rust, where the water is trapped between close joins and welds. See photo for example. This particular area is welded in 3 or 4 locations along the seam and the rest left open but the surfaces are close together. Water becomes entrapped here and sets up more active corrosion cells.
- I have observed new graffiti on the side between two panels at a later visit.

Recommendations

- All detritus (animal detritus, grass, etc.) acts as moisture catchments, which in turn, can become sites for more active, destructive rust.
 - Careful cleaning using dry brush and broom to remove detritus surrounding and on the sculpture followed by
 - Light pressure washing of the bird excrement and overall.
 - A regular program of maintenance – cleaning should be set up. Procedures should be set in place that ensures the safety of the person carrying out cleaning.
- What can be seen of the base of the sculpture appears fairly stable right now, but it is unknown how the very bottom is fairing.
 - The sculpture should be slightly raised from the ground; ensure ground level has good drainage, or if level with ground also ensure an effective moisture barrier exists between the base of the sculpture and ground beneath it.
- All fay surfaces should be checked and sealed with appropriate materials.
- The graffiti removal caused unsightly round large areas of uneven patination on either side of one panel.
 - Information should be sought as to when the graffiti removal took place causing the uneven patination and what methods were used. If it were fairly recently, the sculpture could be monitored over the next two years. It is hopeful, that the protective rust layers build up again and reintegrate with the rest of the panel, although unclear, because the paint remains and the chemical used may have altered that portion.
 - Alternatively, more aggressive methods could be undertaken (with qualified personnel under supervision), where the complete side is blasted overall to stimulate a new visually homogeneous rust over the whole surface rather than the scarred looking middle. Of course, each time this process is utilized, more of the surface is lost and it would also take time to build up.

Area 7 - University of Regina and Research Park

17 Mind's Garden

Owner/ Client: Wascana Centre Authority

Artist: Joe Fafard

Title: Mind's Garden/ Le Jardin De L'esprit

Medium: Bronze

Description

- Large circular structure constructed from 16 panels (total of smaller and larger) of bronze.

Condition

All measurements in centimeters

Sculpture:

- Structurally in sound condition
- Generally the bronze is in good condition, although there are areas of corrosion (green coloration/patina) where the copper has started to form malachite or other corrosion products; all of which are stable but not the original patina. These started forming some time ago, and were present during the last waxing. When

- the wax is sound, it pushes the green coloration back, and the sculpture has a more integrated appearance with the desired look (liver of sulphur dark brown patina).
- Structurally, it is in excellent condition. The artist/foundry welded the panels together several years ago, and all joins appear in good condition.
 - The bronze has been waxed twice in the past to provide extra protection; once at the initial installation, and again 3-4 years ago (by the artist/foundry); however, the weather pattern in this location has caused blanching of the wax on all walls, with severe blanching on north interior and south exterior of panels;
 - Blanching is caused by the breakdown of the wax and/or air pockets between the wax and the substrate – both of which mean that it is no longer providing the same protection and that water now has more access to the substrate.
 - The wax also provides a barrier which is useful in the case of graffiti, and against rodent or other (human) urine etc.
 - In this case, there is evidence of some strong accretions near the base which have caused some discoloring/corrosion (e.g. green discoloration near the base on south exterior)
 - The blanching of the wax and the discolored areas reduce the aesthetic integrity of the piece as well as a cause a reduction in protection.
 - There are numerous gopher holes on the east side, activity from gophers can add to issues reducing aesthetic value, and harm to the sculpture (excrement etc.) and the holes are a potential hazard to visitors.

Central Brass Plaque:

- Set directly into the ground @ the center of interior of the structure. Plaque has overall green corrosion except one spot which has an accretion. The accretion appears to be some form of coating/varnish which dropped onto one spot. The grass in the immediate vicinity is worn too just dirt

Recommendations:

Sculpture:

- Structurally the sculpture is very sound.
- It does need ongoing maintenance in the form of waxing which protects from vandalism etc.
- The structure needs to be cleaned of dirt and debris and then re-waxed where there has been loss and the remaining wax re-melted/buffed. (Estimate 5 days \$2,975.00 labour plus disbursements (getting water to site etc.)

Plaque:

- I would recommend that some thought be given to
 - mounting the plaque more appropriately – raised from ground level with a method for water to drain from the site.
 - It could also be cleaned, re-patinated (stable patination type) and coated.
 - It's possible that the ground is more worn there by people walking around it? If there was a smaller circle of gravel around the raised platform, would this provide a buffer zone and reduced the scuffed look of ground in the area?)
 - I would also recommend that some thought be given to finding a solution to the gopher/ground squirrel problem, in the form of a deterrent that would keep them from desiring to make homes/tunneling so close to the sculpture.

18 Firehouse Elements

Owner/ Client: City of Regina

Artist: David Dorrance

Title: Untitled/ Firehouse Elements

Medium: Weathering Steel/ Polished Stainless Steel

Description

- Base: Two ladder like supports at either end with support platform between constructed from weathering steel; Structures constructed of brushed steel are bolted to the support structure. Small nearby plaque states this is part of the Regina Civic Art Collection

Condition

All measurements in centimeters

Weathering Steel Base:

- Cracking, splitting of steel ("rust jacking") and unstable active corrosion in rear vertical brace proper left side of ladder like structure
- Cracking of weld @ top (join of legs to top platform) in same area
- Blistering rust on base
- Currently the weathering steel base sits on floor concrete platforms, three of which are roughly circular and one square. The three circular look in poor shape, and overall this method detracts greatly from the aesthetic appreciate of the piece.

Polished Steel Structures:

Far left structure:

- Roof dented (inherent)
- Long rectangular structure
 - black accretion (lichen/fungi)
 - Small spot lichen on top PL
- "L" shaped structure
 - "X" shaped graffiti on front @ proper left
 - Dent/grinding mark @ top front corner

Center structure:

- Graffiti (Joe) scratched into building @ center back
- Dent/gouge on front wall 26B/7.5L (metal pushed over

Multi-roofed building:

- Gouge/grinding mark @ peak of roof (inherent)

Recommendations

- A new rectangular plinth should be made for the piece to sit on (stone?) and the 4 disfiguring pieces removed.
- The split steel needs to be repaired. This should be done by a metal fabricator/welder using materials compatible with the object; overseen with someone with a good eye for the artwork, and its stability.
- The stainless structures should be cleaned.
- The worst of the graffiti "JOE" could be ground out, with recognition that every time this is done, some material is removed.

APPENDIX F – LANDSCAPE BUDGET DETAILS

Area Name	WASCANA PARK	Page 1
Area No.	1a	
	Area:	15.4221 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Fair
Density	Good		Irrigation	Good
Thatch	Good		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$	419,431
Urgent Portion of Turf Repair/Upgrade			67%	\$ 280,660

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$226,840
Urgent Portion of Total Cost of Tree Repair/Upgrade:	4%	\$ 8,100

SHRUB BEDS		
	Rating	
Condition	Fair	
Density	Fair	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 432,486.92
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ 250,451.35

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Fair	
Edging	Fair	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 17,549
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	20%	\$ 3,554

SPORTSFIELDS - Soccer/Football									
General		Rating	Turf Condition		Rating	Field Problems		Rating	
Goal Areas		-	Overall		-	Ground Squirrel Damage		-	
Centre Area		-	Density		-	Grading Problem		-	
			Thatch		-	Dry Turf Area		-	
						Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-			
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-
SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating	
Layout		-	Weeds			Ground Squirrel Damage		-	
Weeds		-	Density			Grading Problem		-	
Surface		-	Thatch			Dry Turf Area		-	
Grading		-							
Est. Cost of Diamond Repair:					\$	-			
						Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	64.4%	Poor	
Wood Chip	39.9%	Good	
Estimated Cost of Surface Repair/Upgrade:			\$ 11,721
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS	Quantity	
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches	Good	
Picnic Tables	Good	
BBQ / Trash Units	Poor	
Information Kiosks	Fair	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 4,000
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		90% \$ 3,600

	Total Estimated Cost for Park Repair/Upgrade:		\$ 1,112,028
	Urgent Portion of Park Repair/Upgrade:	49%	\$ 546,365
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 7.21

NOTES:

- Under trees turf is often patchy and thin with lots of patches of soil exposed.
- Most path edges have vehicle damage on both sides. Full size trucks are used throughout the park and do not fit on pathways properly therefore damaging the turf on either side.
- When the large mower goes around the trees it often leaves tire tracks in the turf. It appears as if it goes around quickly and tears the turf.
- Where there aren't any sidewalks there are pedestrian wear paths through the turf. This occurs along Wascana Dr.
- Generally, shrubs throughout are over grown, long and leggy and have little to no foliage within interior of shrubs. Replacements and heavy pruning recommended.
- Tall overgrown shrubs obscure sightlines and create enclosed spaces. Visibility and safety is an issue in specific areas.
- Additional maintenance is needed to keep shrubs as dense massings.
- Tree beds are overcrowded resulting in inner branch die back or tree loss.
- 4% of trees on site require removal.
- 19% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	COLLEGE CAMPUS	Page 1
Area No.	1b	
	Area:	6.2438 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Fair
Density	Fair	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 280,107
Urgent Portion of Turf Repair/Upgrade		80%	\$ 225,075

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$ 75,640
Urgent Portion of Total Cost of Tree Repair/Upgrade:	15%	\$ 11,700

SHRUB BEDS		
	Rating	
Condition	Critical	
Density	Critical	
Weeds	Heavy	
Mulch	Critical	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 263,678.55
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	83%	\$ 219,545.78

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 22,196
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	12%	\$ 2,693

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-		
SPORTSFIELDS - Ball Diamonds											
Infield		Rating	Outfield Turf Condition			Diamond Problems			Rating		
Layout		-	Weeds			-	Ground Squirrel Damage			-	
Weeds		-	Density			-	Grading Problem			-	
Surface		-	Thatch			-	Dry Turf Area			-	
Grading		-									
Est. Cost of Diamond Repair:					\$	-	Est. Cost of Problem Repair:			\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):										\$	-
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-		

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Poor	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 4,400
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches	-	
Picnic Tables	-	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		- \$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 646,021
	Urgent Portion of Park Repair/Upgrade:	71%	\$ 459,014
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 10.35

NOTES:

- There is vehicle damage from both trucks and mowers at numerous points throughout the site
- Under trees there is a buildup of dead leaves. The grass is not able to grow through this debris and is therefore growing in patches.
- The small mower that cuts around trees is set lower than the large mower so when cut across lawns, the line is very noticeable and unsightly.
- Generally, shrubs are overgrown, long and leggy with foliage at the outer edges of the plant.
- Because these shrubs are so leggy, pruning them down to a smaller size is not an option. Replacements recommended.
- Throughout the site shrubs are too close to buildings. Some shrubs are covering windows.
- New tree plantings do not flow with older plantings, a somewhat disjointed overall planting.
- Conditions evident in some isolated locations where wrong species planted.
- 2 of trees on site require removal.
- 4% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	WILLOW ISLAND	Page 1
Area No.	1c	
Area:		1.0176 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Good	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 5,773
Urgent Portion of Turf Repair/Upgrade		0%	\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Critical	
Estimated Total Cost of Tree Repair/Upgrade		\$ 7,140
Urgent Portion of Total Cost of Tree Repair/Upgrade:	1%	\$ 100

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 4,531.86
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	31%	\$ 1,423.13

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		-	Overall		-	Ground Squirrel Damage		-		
Centre Area		-	Density		-	Grading Problem		-		
			Thatch		-	Dry Turf Area		-		
						Irrigation Head Damaged		-		
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-	
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-	
SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating		
Layout		-	Weeds		-	Ground Squirrel Damage		-		
Weeds		-	Density		-	Grading Problem		-		
Surface		-	Thatch		-	Dry Turf Area		-		
Grading		-								
Est. Cost of Diamond Repair:					\$	-	Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Poor	Plant Species	-	Deadfall	Numerous
Plant Species	Poor	Species Extent	-	Re-growth	Prevalent
				Weed Infestation	Lim < 1m
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	75.1%	Fair	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 4,844
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches	-	
Picnic Tables	Poor	
BBQ / Trash Units	Poor	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 3,350
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		96% \$ 3,200

	Total Estimated Cost for Park Repair/Upgrade:		\$ 25,639
	Urgent Portion of Park Repair/Upgrade:	18%	\$ 4,723
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 2.52

NOTES:

- Caragana should be removed from the beds and the water's edge as it is an invasive species.
- Generally, the condition of the trees on Willow island are fair to good however some require replacements. There are dead branches throughout and most trees require pruning.
- Planting of new Willow is needed to replace the aging willows when they die.
- 8% of trees on site require removal.
- 31% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	QUEEN BUILDING	Page 1
Area No.	2a	
Area:		2.9286 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Fair
Density	Fair		Irrigation	Good
Thatch	Good		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:				\$ 94,323
Urgent Portion of Turf Repair/Upgrade			73%	\$ 69,013

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$ 42,900
Urgent Portion of Total Cost of Tree Repair/Upgrade:	6%	\$ 2,700

SHRUB BEDS		
	Rating	
Condition	Fair	
Density	Poor	
Weeds	Heavy	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 32,235.53
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		
		53% \$ 17,091.00

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Fair	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 400
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		0% \$ -

SPORTSFIELDS - Soccer/Football										
General		Rating		Turf Condition	Rating		Field Problems	Rating		
Goal Areas		-		Overall	-		Ground Squirrel Damage	-		
Centre Area		-		Density	-		Grading Problem	-		
				Thatch	-		Dry Turf Area	-		
							Irrigation Head Damaged	-		
Estimated Cost of Field Turf Repair/Upgrade:				\$	-		Est. Cost to Repair Problems:	\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-	
Urgent Portion of Repair/Upgrade (All fields):								-	\$	-

SPORTSFIELDS - Ball Diamonds						
Infield	Rating		Outfield Turf Condition			Diamond Problems
Layout	-		Weeds	-		Ground Squirrel Damage
Weeds	-		Density	-		Grading Problem
Surface	-		Thatch	-		Dry Turf Area
Grading	-					
Est. Cost of Diamond Repair:				\$ -		Est. Cost of Problem Repair:
						\$ -
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 169,859
	Urgent Portion of Park Repair/Upgrade:	52%	\$ 88,804
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 5.80

NOTES:

- There is pedestrian and vehicle wear along the side of the majority of the pathways and there is a pedestrian wear path along the waterfront.
- The small mowers, used for going around trees, are set lower than the big mowers, cuts across lawns are very noticeable and unsightly
- Where there aren't any sidewalks there are pedestrian wear paths through the turf. This occurs along Wascana Dr.
- Generally shrubs are over grown and tend to exceed their shrub bed. Replacements and pruning required.
- Caragana is the dominant species along the lake edge. Generally it is long and leggy with little foliage within interior of shrub.
- Trees at foundation of Queen Building are too close to building but in good condition.
- Some pruning required throughout area and removal of shoreline dieback.
- 2% of trees on site require removal.
- 13% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	WASCANA PLACE	Page 1
Area No.	2b	
Area:		5.6499 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Fair
Density	Fair	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 278,641
Urgent Portion of Turf Repair/Upgrade		86%	\$ 240,471

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 84,170
Urgent Portion of Total Cost of Tree Repair/Upgrade:	4%	\$ 3,150

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Poor	
Weeds	Heavy	
Mulch	Critical	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 204,629.51
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	49%	\$ 100,080.63

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 2,363
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	23%	\$ 548

SPORTSFIELDS - Soccer/Football							
General	Rating	Turf Condition	Rating	Field Problems	Rating		
Goal Areas	-	Overall	-	Ground Squirrel Damage	-		
Centre Area	-	Density	-	Grading Problem	-		
		Thatch	-	Dry Turf Area	-		
Estimated Cost of Field Turf Repair/Upgrade:				Irrigation Head Damaged	-		
				Est. Cost to Repair Problems:		\$ -	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):						\$ -	
Urgent Portion of Repair/Upgrade (All fields):						\$ -	
SPORTSFIELDS - Ball Diamonds							
Infield	Rating	Outfield Turf Condition		Diamond Problems	Rating		
Layout	-	Weeds	-	Ground Squirrel Damage	-		
Weeds	-	Density	-	Grading Problem	-		
Surface	-	Thatch	-	Dry Turf Area	-		
Grading	-						
Est. Cost of Diamond Repair:				Est. Cost of Problem Repair:		\$ -	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -	
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	57.2%	Good	
Wood Chip	-		
Estimated Cost of Surface Repair/Upgrade:			\$ 18,451
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches	Good	
Picnic Tables	Fair	
BBQ / Trash Units	Poor	
Information Kiosks	Fair	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 5,650
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		88% \$ 4,950

	Total Estimated Cost for Park Repair/Upgrade:		\$ 593,904
	Urgent Portion of Park Repair/Upgrade:	59%	\$ 349,199
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 10.51

NOTES:

- There are lots of weeds along Broad street.
- By the boathouse the ground is spongy, the grass is struggling and very compressed, flat and thin, (possibly due to previous flood damage)
- The grass under the waterfront concrete bollards looks dry and is struggling (Proximity to edge/ concrete retaining wall possibly the problem)
- Where there aren't any sidewalks there are pedestrian wear paths through the turf. This occurs along Wascana Dr.
- Generally shrubs are overgrown. Many are long and leggy with little foliage within the interior of the shrub. Heavy pruning recommended and removal at Trafalgar Lookout.
- Shrubs along paths require pruning.
- Sightlines of pedestrians and vehicles are being restricted by overgrown shrubs. Pruning required.
- Some areas of pathways are weedy or damaged, repair required.
- Pathways exceed intended width. Indicates high volume of pedestrian traffic. Recommend increasing Pedestrian path widths.
- 2% of trees on site require removal.
- 6% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	LEGISLATIVE GROUNDS	Page 1
Area No.	3a	
Area:		11.457 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Good
Density	Good		Irrigation	Good
Thatch	Good		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:				\$ 251,542
Urgent Portion of Turf Repair/Upgrade			82%	\$ 206,461

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$741,980
Urgent Portion of Total Cost of Tree Repair/Upgrade:	1%	\$ 7,100

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Critical	
Weeds	Heavy	
Mulch	Critical	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 408,364.96
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	57%	\$ 233,628.18

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Fair	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 65,474
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	10%	\$ 6,656

SPORTSFIELDS - Soccer/Football										
General		Rating		Turf Condition	Rating		Field Problems	Rating		
Goal Areas		-		Overall	-		Ground Squirrel Damage	-		
Centre Area		-		Density	-		Grading Problem	-		
				Thatch	-		Dry Turf Area	-		
							Irrigation Head Damaged	-		
Estimated Cost of Field Turf Repair/Upgrade:				\$	-		Est. Cost to Repair Problems:	\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-	
Urgent Portion of Repair/Upgrade (All fields):								-	\$	-

SPORTSFIELDS - Ball Diamonds						
Infield	Rating		Outfield Turf Condition			Diamond Problems
Layout	-		Weeds	-		Ground Squirrel Damage
Weeds	-		Density	-		Grading Problem
Surface	-		Thatch	-		Dry Turf Area
Grading	-					
Est. Cost of Diamond Repair:				\$ -		Est. Cost of Problem Repair:
						\$ -
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Fair	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 2,713
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches	Fair	
Picnic Tables	-	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		- \$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 1,470,074
	Urgent Portion of Park Repair/Upgrade:	31%	\$ 453,846
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 12.83

NOTES:

- Utility lines that run across the lawns have caused the turf above them to sink, causing shallow trenches across the turf.
- Ground squirrel holes are numerous around the Legislative Building.
- Central lawn behind legislative building, dryland mix, the part closest to the building has been mown while the rest is unmown and looks untidy. The tall grass is creeping into the tree beds and the line between mown and unmown appears random.
- The perennial beds on the sides of the Legislative building require weeding.
- Generally Shrubs are overgrown, long and leggy, have dead branches throughout and have little to no foliage within interior of shrub. Replacements and heavy pruning recommended.
- Throughout the legislative grounds blocks of land are composed of overgrown perimeter shrub plantings with shade trees within large expanses of rototilled soil. Blocks are recommended to have turf seeded in place of rototilled soil. It is recommended to remove the majority of perimeter shrub material to allow for increased sunlight into these enclosed areas.
- Some shrubs are missing from the intended design. Replacements required.
- Unreasonable underplanting i.e. pine under elm
- Some planting beds are over crowded others require infill planting
- Should remove and replace all disfigured trees.
- Complete site needs a rationalized plan for forest management.
- Large open cultivated areas need some ground cover instead of excessive cultivation.
- 2% of trees on site require removal.
- 34% of trees on site require pruning.

Area Name	TC DOUGLAS		Page 1
Area No.	3b		
		Area:	10.5379 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Good
Density	Good		Irrigation	Good
Thatch	Good		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$	89,760
Urgent Portion of Turf Repair/Upgrade			52%	\$ 46,658

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$151,180
Urgent Portion of Total Cost of Tree Repair/Upgrade:	4%	\$ 5,300

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Critical	
Weeds	Heavy	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 297,234.07
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	51%	\$ 151,637.14

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Poor	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 7,967
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	16%	\$ 1,285

SPORTSFIELDS - Soccer/Football									
General		Rating	Turf Condition		Rating	Field Problems		Rating	
Goal Areas		-	Overall		-	Ground Squirrel Damage		-	
Centre Area		-	Density		-	Grading Problem		-	
			Thatch		-	Dry Turf Area		-	
						Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-		Est. Cost to Repair Problems:	
								\$	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	
Urgent Portion of Repair/Upgrade (All fields):								-	
								-	
SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating	
Layout		-	Weeds		-	Ground Squirrel Damage		-	
Weeds		-	Density		-	Grading Problem		-	
Surface		-	Thatch		-	Dry Turf Area		-	
Grading		-							
Est. Cost of Diamond Repair:					\$	-		Est. Cost of Problem Repair:	
								\$	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	
Urgent Portion of Repair/Upgrade (All diamonds):								-	
								-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Good	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 9,138
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches	Good	
Picnic Tables	-	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 150
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		0% \$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 555,429
	Urgent Portion of Park Repair/Upgrade:	37%	\$ 204,880
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 5.27

NOTES:

- There are numerous points throughout the site where there is no turf due to construction, these patches of soil require grading and seeding.
- Throughout the site the ground squirrels have made holes. This is most prominent around the buildings and along the edges of sidewalks and pathways.
- Most shrub beds are filled with weeds.
- Many shrubs are overgrown and have dead wood throughout. Pruning and/or removal required.
- Many shrubs are missing from their design. Replacements required.
- Plant material that is not being manicured seems to be common in this sector and pruning is required. Volunteer plants are common.
- Alternate ground cover, such as turf, should be considered for large cultivated beds.
- 1% of trees on site require removal.
- 26% of trees on site require pruning.

Area Name	WASCANA REHAB		Page 1
Area No.	3c		
		Area:	4.33 ha

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ 54,420
Urgent Portion of Total Cost of Tree Repair/Upgrade:	0%	\$ -

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Critical	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 89,112.35
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	44%	\$ 39,413.63

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 3,637
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	6%	\$ 206

SPORTSFIELDS - Soccer/Football					
General		Rating	Turf Condition		Rating
Goal Areas		-	Overall		-
Centre Area		-	Density		-
			Thatch		-
Estimated Cost of Field Turf Repair/Upgrade:					\$ -
Field Problems					Rating
Ground Squirrel Damage					-
Grading Problem					-
Dry Turf Area					-
Irrigation Head Damaged					-
Est. Cost to Repair Problems:					\$ -
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):					\$ -
Urgent Portion of Repair/Upgrade (All fields):					- \$ -
SPORTSFIELDS - Ball Diamonds					
Infield		Rating	Outfield Turf Condition		Rating
Layout		-	Weeds		-
Weeds		-	Density		-
Surface		-	Thatch		-
Grading		-			
Diamond Problems					Rating
Ground Squirrel Damage					-
Grading Problem					-
Dry Turf Area					-
Est. Cost of Problem Repair:					\$ -
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):					\$ -
Urgent Portion of Repair/Upgrade (All diamonds):					- \$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 432,905
	Urgent Portion of Park Repair/Upgrade:	57%	\$ 244,721
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 10.00

NOTES:

- The turf around the parking lot and along Avenue G is patchy and has a number of weeds.
- Patches of soil from construction require grading and seeding.
- The edges of pathways are showing pedestrian and vehicle damage.
- Ground squirrel holes have been found throughout the site.
- The vents from the building are blowing onto the turf resulting in bare patches. These areas should be incorporated into planting beds.
- Shrubs are generally overgrown. Replacements recommended for some conditions. Pruning required throughout.
- Shrubs are missing throughout site, replacements required.
- 1% of trees on site require removal.
- 36% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	WEST NURSERY	Page 1
Area No.	3d	
Area:		6.5748 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			\$	-

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 91,710
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
	4%	\$ 3,950

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Heavy	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 31,009.74
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		
	20%	\$ 6,204.71

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		-	Overall		-	Ground Squirrel Damage		-		
Centre Area		-	Density		-	Grading Problem		-		
			Thatch		-	Dry Turf Area		-		
						Irrigation Head Damaged		-		
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-	

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 122,720
	Urgent Portion of Park Repair/Upgrade:	8%	\$ 10,155
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.87

NOTES:

- Old nursery plantings are overgrown.
- Major pruning and removal of old stumps and caragana rows are needed for this site to be used by the public.
- 1% of trees on site require removal.
- 54% of trees on site require pruning.

Area Name	EAST NURSERY		Page 1
Area No.	3e		
		Area:	1.1024 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	Good
Density	-		Irrigation	Good
Thatch	-		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$	540
Urgent Portion of Turf Repair/Upgrade			0%	\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 6,200
Urgent Portion of Total Cost of Tree Repair/Upgrade:	15%	\$ 900

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 16,621.50
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	0%	\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 883
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	4%	\$ 33

SPORTSFIELDS - Soccer/Football									
General		Rating	Turf Condition		Rating	Field Problems		Rating	
Goal Areas		-	Overall		-	Ground Squirrel Damage		-	
Centre Area		-	Density		-	Grading Problem		-	
			Thatch		-	Dry Turf Area		-	
						Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-			
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-
SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating	
Layout		-	Weeds			Ground Squirrel Damage		-	
Weeds		-	Density			Grading Problem		-	
Surface		-	Thatch			Dry Turf Area		-	
Grading		-							
Est. Cost of Diamond Repair:					\$	-			
Est. Cost of Problem Repair:								\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 24,245
	Urgent Portion of Park Repair/Upgrade:	4%	\$ 933
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 2.20

NOTES:

- Shrubs are overgrown and are leaning out over pathways, pruning is required.
- Tree plantings are very close together from previous nursery, this may begin to affect the trees' landscape value.
- Alternate ground cover should be considered for cultivated beds on the north side of the site.
- 1% of trees on site require removal.
- 29% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	HILLSDALE CORRIDOR	Page 1
Area No.	3f	
Area:		3.1474 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			\$	-

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 23,150
Urgent Portion of Total Cost of Tree Repair/Upgrade:	6%	\$ 1,350

SHRUB BEDS		
	Rating	
Condition	Fair	
Density	Critical	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 13,407.15
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		64% \$ 8,597.05

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating		Turf Condition	Rating		Field Problems		Rating	
Goal Areas		-		Overall	-		Ground Squirrel Damage		-	
Centre Area		-		Density	-		Grading Problem		-	
				Thatch	-		Dry Turf Area		-	
							Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:				\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-	
Urgent Portion of Repair/Upgrade (All fields):								-	\$	-

SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating			
Layout		-	Weeds	-	Ground Squirrel Damage		-			
Weeds		-	Density	-	Grading Problem		-			
Surface		-	Thatch	-	Dry Turf Area		-			
Grading		-								
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:		\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):								-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity	
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 36,557
	Urgent Portion of Park Repair/Upgrade:	27%	\$ 9,947
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.16

NOTES:

- Dieback in shrubs along Hillsdale Street should be removed. Replacement may not be necessary.
- 2% of trees on site require removal.
- 28% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	LAKE SHORE	Page 1
Area No.	3g	
Area:		6.4861 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Fair
Density	Good		Irrigation	Good
Thatch	Good		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:				\$ 158,900
Urgent Portion of Turf Repair/Upgrade			69%	\$ 109,163

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	Critical	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$ 187,700
Urgent Portion of Total Cost of Tree Repair/Upgrade:	6%	\$ 11,600

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Critical	
Weeds	Heavy	
Mulch	Critical	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 87,204.06
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	51%	\$ 44,743.88

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football									
General		Rating		Turf Condition	Rating		Field Problems	Rating	
Goal Areas		-		Overall	-		Ground Squirrel Damage	-	
Centre Area		-		Density	-		Grading Problem	-	
				Thatch	-		Dry Turf Area	-	
							Irrigation Head Damaged	-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:	\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-

SPORTSFIELDS - Ball Diamonds						
Infield	Rating		Outfield Turf Condition			Diamond Problems
Layout	-		Weeds	-		Ground Squirrel Damage
Weeds	-		Density	-		Grading Problem
Surface	-		Thatch	-		Dry Turf Area
Grading	-					
Est. Cost of Diamond Repair:				\$ -		Est. Cost of Problem Repair:
						\$ -
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	90.0%	Good	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 37,581
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches	Fair	
Picnic Tables	Fair	
BBQ / Trash Units	Fair	
Information Kiosks	Fair	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 13,600
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		97% \$ 13,150

	Total Estimated Cost for Park Repair/Upgrade:		\$ 484,985
	Urgent Portion of Park Repair/Upgrade:	37%	\$ 178,657
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 7.48

NOTES:

- At the eastern part of the site, near Pine Island, the turf has numerous ground squirrel holes.
- Pedestrian wear is present along Lakeshore Drive and along the edges of the pathways.
- The turf between the parking lot and the waterfront near Pine Island has been grazed by the geese, causing a very thin cover.
- The turf on the bank that slopes to the water's edge near Pine Island is patchy. Because of the thin cover it seems to have numerous washouts.
- Most pathways on site require cleanup of their edges where grass is creeping in and narrowing the path, these points have been marked by GPS.
- Shrubs are generally overgrown, long and leggy and has little to no foliage within the interior of the shrub. Replacements and heavy pruning required.
- Wear patterns through planting beds at Broad St. Repair mulch and add shrubs to prevent pedestrians from going through bed.
- Predominant lakeshore planting is caragana.
- 1% of trees on site require removal.
- 38% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	SPRUCE ISLAND	Page 1
Area No.	3h	
Area:		1.3004 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	-	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ -
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
		\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):									-	\$	-

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	Non-Apparent
Plant Species	-	Species Extent	-	Re-growth	50% of area
				Weed Infestation	Lim > 1m
Cost of Natural Area Repair/Upgrade:					\$ 60,000.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches	Fair	
Picnic Tables	-	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 60,000
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 4.61

NOTES:

- Deadfall is also prevalent consisting mostly of caragana trunks that have fallen over.
- Several large dead standing Spruce appear to be secure but may topple and damage park users.
- Caragana and buckthorn are the weed species still predominant in several areas.
- Shoreline rock protection seems to be set too low at some points on the north side of the island and subsequently soil erosion is undermining plantings.
- Consider placing garbage container at landing dock.
- New plantings are very successful. Poplar and willow should be used to under plant older areas.

AREA REPAIR SUMMARY

Area Name	PINE ISLAND	Page 1
Area No.	3i	
Area:		0.3314 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Poor	Irrigation	Good
Thatch	Poor	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 9,345
Urgent Portion of Turf Repair/Upgrade			74% \$ 6,916

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 3,550
Urgent Portion of Total Cost of Tree Repair/Upgrade:	89%	\$ 3,150

SHRUB BEDS		
	Rating	
Condition	Critical	
Density	Poor	
Weeds	Heavy	
Mulch	Critical	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 51,421.93
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	64%	\$ 33,115.18

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football						
General	Rating	Turf Condition	Rating	Field Problems	Rating	
Goal Areas	-	Overall	-	Ground Squirrel Damage	-	
Centre Area	-	Density	-	Grading Problem	-	
		Thatch	-	Dry Turf Area	-	
Estimated Cost of Field Turf Repair/Upgrade:			\$ -	Irrigation Head Damaged	-	
				Est. Cost to Repair Problems:	\$ -	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):						\$ -
Urgent Portion of Repair/Upgrade (All fields):						\$ -

SPORTSFIELDS - Ball Diamonds						
Infield	Rating	Outfield Turf Condition		Diamond Problems	Rating	
Layout	-	Weeds	-	Ground Squirrel Damage	-	
Weeds	-	Density	-	Grading Problem	-	
Surface	-	Thatch	-	Dry Turf Area	-	
Grading	-					
Est. Cost of Diamond Repair:			\$ -	Est. Cost of Problem Repair:	\$ -	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Fair	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 13,969
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches	Good	
Picnic Tables	-	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		- \$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 78,286
	Urgent Portion of Park Repair/Upgrade:	55%	\$ 43,181
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 23.62

NOTES:

- Turf over the entire island has been grazed by geese resulting in a very thin cover.
- Because of thin turf cover the weeds in the turf are numerous and very visible and unsightly.
- On the western side of the bridge where the turf is supposed to go down to the gabions, goose traffic and flood damage has left it as exposed soil.
- Gaps are present between turf that runs to the water's edge and the gabions.
- All tree beds require weeding
- Pine island is weedy and there are some dead shrubs. Replacements and maintenance required.
- Wear patterns through planting beds. Repair mulch and add shrubs to prevent pedestrians from going through bed.
- 4% of trees on site require removal.
- 1% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	GOOSEHILL PARK	Page 1
Area No.	4a	
Area:		9.7334 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Fair
Density	Good		Irrigation	Good
Thatch	Good		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:				\$ 263,392
Urgent Portion of Turf Repair/Upgrade			78%	\$ 205,990

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	-	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$ 224,900
Urgent Portion of Total Cost of Tree Repair/Upgrade:	1%	\$ 2,700

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Critical	
Weeds	Moderate	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 219,954.79
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	28%	\$ 62,053.53

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football									
General		Rating		Turf Condition	Rating		Field Problems	Rating	
Goal Areas		-		Overall	-		Ground Squirrel Damage	-	
Centre Area		-		Density	-		Grading Problem	-	
				Thatch	-		Dry Turf Area	-	
					Irrigation Head Damaged	-			
Estimated Cost of Field Turf Repair/Upgrade:				\$	-	Est. Cost to Repair Problems:	\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):							\$	-	
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-

SPORTSFIELDS - Ball Diamonds						
Infield	Rating		Outfield Turf Condition			Diamond Problems
Layout	-		Weeds	-		Ground Squirrel Damage
Weeds	-		Density	-		Grading Problem
Surface	-		Thatch	-		Dry Turf Area
Grading	-					
Est. Cost of Diamond Repair:				\$ -	Est. Cost of Problem Repair:	
					\$ -	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Poor	Plant Species	-	Deadfall	Non-Apparent
Plant Species	Poor	Species Extent	-	Re-growth	50% of area
				Weed Infestation	Lim > 1m
Cost of Natural Area Repair/Upgrade:					\$ 15,000.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches	-	
Picnic Tables	Poor	
BBQ / Trash Units	Fair	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 44,550
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		99% \$ 44,000

	Total Estimated Cost for Park Repair/Upgrade:		\$ 723,247
	Urgent Portion of Park Repair/Upgrade:	44%	\$ 314,743
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 7.43

NOTES:

- The turf is generally quite dry and there are numerous dry patches where the grass is turning yellow.
- There is a pedestrian wear path along the entire length of site, along the creek.
- Shrubs are generally in good condition but are overgrown and exceed bed size. Pruning is required to allow mowers to get closer to bed edge.
- Picnic areas are overgrown and require pruning.
- An annual pruning program should be initiated.
- Some evidence of beaver damage on about 4 trees near water edge. Should consider wire mesh wrap to protect these trees.
- 1% of trees on site require removal.
- 61% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	PELICAN ISLAN	Page 1
Area No.	4b	
Area:		0.5874 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	-	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ -
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
		\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):									-	\$	-

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:	\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	-
Plant Species	Poor	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ 9,250.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches	-	
Picnic Tables	-	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 9,250
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.57

NOTES:

- Island is predominantly covered with yellow clover and some pasture sage.
- Tall vegetation makes the island an undesirable nesting area.

AREA REPAIR SUMMARY

Area Name	SCIENCE CENTRE	Page 1
Area No.	4c	
Area:		0.9653 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Fair
Density	Poor	Irrigation	Good
Thatch	Poor	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:		\$ 76,009	
Urgent Portion of Turf Repair/Upgrade		80%	\$ 61,145

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Critical	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 8,800
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
	39%	\$ 3,400

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Moderate	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 28,083.33
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		
	32%	\$ 8,926.36

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 2,023
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		20% \$ 405

SPORTSFIELDS - Soccer/Football						
General		Rating	Turf Condition		Rating	
Goal Areas		-	Overall		-	
Centre Area		-	Density		-	
			Thatch		-	
Estimated Cost of Field Turf Repair/Upgrade:						\$ -
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):						\$ -
Urgent Portion of Repair/Upgrade (All fields):						- \$ -
SPORTSFIELDS - Ball Diamonds						
Infield		Rating	Outfield Turf Condition			
Layout		-	Weeds		-	
Weeds		-	Density		-	
Surface		-	Thatch		-	
Grading		-				
Est. Cost of Diamond Repair:						\$ -
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						- \$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	Non-Apparent
Plant Species	-	Species Extent	-	Re-growth	Prevalent
				Weed Infestation	Lim > 1m
Cost of Natural Area Repair/Upgrade:					\$ 2,718.33

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity	
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 117,633
	Urgent Portion of Park Repair/Upgrade:	63%	\$ 73,876
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 12.19

NOTES:

- Turf is generally patchy underneath stands of trees and soil is visible.
- Surrounding the playground the turf is thin and growing in patches from high pedestrian use.
- There is ground squirrel damage throughout the entire site.
- The north part of the site has patchy grass and visible soil surrounding newly cut and planted shrub beds.
- Running along the River there is a pedestrian worn pathway.
- New/young trees are struggling with a few requiring replacement around the High Voltage area.
- Most junipers on the site require pruning of dead branches
- Shrub beds designed to screen High Voltage Areas appear to be struggling and therefore do not do as intended.
- 3% of trees on site require removal.
- 12% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	CANDY CANE PARK	Page 1
Area No.	4d	
Area:		5.2767 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Good	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 75,450
Urgent Portion of Turf Repair/Upgrade			76% \$ 57,670

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 84,680
Urgent Portion of Total Cost of Tree Repair/Upgrade:	9%	\$ 7,900

SHRUB BEDS		
	Rating	
Condition	Fair	
Density	Critical	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 151,980.13
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	53%	\$ 80,146.55

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football						
General	Rating	Turf Condition	Rating	Field Problems	Rating	
Goal Areas	-	Overall	-	Ground Squirrel Damage	-	
Centre Area	-	Density	-	Grading Problem	-	
		Thatch	-	Dry Turf Area	-	
Estimated Cost of Field Turf Repair/Upgrade:			\$ -	Irrigation Head Damaged	-	
				Est. Cost to Repair Problems:	\$ -	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):					\$ -	
Urgent Portion of Repair/Upgrade (All fields):					- \$ -	
SPORTSFIELDS - Ball Diamonds						
Infield	Rating	Outfield Turf Condition		Diamond Problems	Rating	
Layout	-	Weeds	-	Ground Squirrel Damage	-	
Weeds	-	Density	-	Grading Problem	-	
Surface	-	Thatch	-	Dry Turf Area	-	
Grading	-					
Est. Cost of Diamond Repair:			\$ -	Est. Cost of Problem Repair:	\$ -	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):					\$ -	
Urgent Portion of Repair/Upgrade (All diamonds):					- \$ -	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches	Good	
Picnic Tables	Fair	
BBQ / Trash Units	Fair	
Information Kiosks	Fair	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 7,500
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		91% \$ 6,800

	Total Estimated Cost for Park Repair/Upgrade:		\$ 319,610
	Urgent Portion of Park Repair/Upgrade:	48%	\$ 152,516
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 6.06

NOTES:

- Along McDonald St the turf has many dandelions
- Sasktel construction sites require grading and seeding. Repair has been undertaken.
- Along McDonald St. there are frequent patches of dead or dry turf, this is possibly from snow piled on it after snow removal.
- There is a large amount of pedestrian wear around the picnic areas and the playground and a pedestrian wear path runs along Wascana Dr where there is no sidewalk.
- Generally shrubs are overgrown, long and leggy and have dead branches throughout. Pruning/thinning required.
- Some shrubs are missing from around the picnic areas and around play equipment area. While others on site are in critical condition. Replacements recommended.
- Mulch in beds is fair to critical.
- Numerous instances of poplar roots exposed in turf. This does not appear to bother trees however grass cutting operations are affected.
- Poplars in play area are damaged by under plantings causing hazardous branching that may injure park users.
- 2% of trees on site require removal.
- 17% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	WATER FOWL PARK OUTLOOK	Page 1
Area No.	4e	
Area:		3.9767 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Good	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:		\$ 11,152	
Urgent Portion of Turf Repair/Upgrade		53%	\$ 5,892

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	Poor	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 33,540
Urgent Portion of Total Cost of Tree Repair/Upgrade:		19% \$ 6,300

SHRUB BEDS		
	Rating	
Condition	Critical	
Density	Poor	
Weeds	Moderate	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 6,166.83
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		60% \$ 3,684.38

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):									-	\$	-

SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating			
Layout		-	Weeds	-	Ground Squirrel Damage		-			
Weeds		-	Density	-	Grading Problem		-			
Surface		-	Thatch	-	Dry Turf Area		-			
Grading		-								
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:		\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):								-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	Isolated
Plant Species	Good	Species Extent	-	Re-growth	Limited
				Weed Infestation	Lim < 1m
Cost of Natural Area Repair/Upgrade:					\$ 7,500.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 58,359
	Urgent Portion of Park Repair/Upgrade:	27%	\$ 15,876
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.47

NOTES:

- A Pedestrian wear path runs along the entire waterfront. Since this area is heavily used a wood chip or crusher dust pathway is recommended.
- There are numerous ground squirrel holes around the skate park.
- Mower damage is a trend throughout trees in dryland grass areas.
- Some trees have dead branches and are suckering at base. Pruning required.
- Russian olive has broken bark and dead branches. Overall these trees are old and will require replacing very soon. Replacements required.
- Although dandelions and Canada thistle weed species are evident along the lake shore, they occur in small numbers and are not showing evidence of colonizing any area.
- 1% of trees on site require removal.
- 8% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	PAC SHORELINE	Page 1
Area No.	5a	
Area:		2.4917 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 6,530
Urgent Portion of Total Cost of Tree Repair/Upgrade:	34%	\$ 2,250

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Critical	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 3,610.80
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	42%	\$ 1,530.00

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):									-	\$	-

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:	\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	Good	Deadfall	Numerous
Plant Species	Fair	Species Extent	Good	Re-growth	Limited
				Weed Infestation	Lim < 1m
Cost of Natural Area Repair/Upgrade:					\$ 5,000.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Fair	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 12,625
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches	Good	
Picnic Tables	-	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		- \$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 27,766
	Urgent Portion of Park Repair/Upgrade:	14%	\$ 3,780
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.11

NOTES:

- At the western edge of the site, along Broad St. there are pedestrian wear paths between the sidewalk and the pathway lower down. Suggestion: As people appear to want to get from the pathway to the sidewalk it is recommended to lay crusher dust over this desire line.
- The vegetation closest to the Waterfowl Display Ponds has been grazed by the geese resulting in very short grass. There are numerous weeds in this area which become very visible when the grass is so short.
- Numerous willows along the waterfront appear to have a pest problem or disease where clumps appear throughout the branches, it looks like witches broom but I cannot see any reason why this would occur as there should not be any salt nearby.
- Trees have dead branches throughout. Pruning required.
- Some dead trees on site. Replacement required.
- Tree beds are weedy and have suckering growth throughout. Maintenance required.
- The amount of area of turf being irrigated west of Waterfowl Display ponds exceeds the area effected by geese. Reduction of irrigated area is recommended.
- Native plant stands block views of lake, are long and leggy in some areas. Pruning recommended to open up views and encourage new growth of shrubs.
- 3% of trees on site require removal.
- 19% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	PERFORMING ARTS CENTRE (PAC)	Page 1
Area No.	5b	
Area:		7.4399 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Good
Density	Fair		Irrigation	Good
Thatch	Poor		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:				\$ 242,160
Urgent Portion of Turf Repair/Upgrade			75%	\$ 181,640

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$ 52,320
Urgent Portion of Total Cost of Tree Repair/Upgrade:	7%	\$ 3,600

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 23,615.24
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	5%	\$ 1,166.12

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 80
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	100%	\$ 80

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		-	Overall		-	Ground Squirrel Damage		-		
Centre Area		-	Density		-	Grading Problem		-		
			Thatch		-	Dry Turf Area		-		
						Irrigation Head Damaged		-		
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-	
SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating		
Layout		-	Weeds			Ground Squirrel Damage		-		
Weeds		-	Density			Grading Problem		-		
Surface		-	Thatch			Dry Turf Area		-		
Grading		-								
Est. Cost of Diamond Repair:					\$	-	Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):									\$	-
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 318,175
	Urgent Portion of Park Repair/Upgrade:	59%	\$ 186,486
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 4.28

NOTES:

- The turf around the east parking lot, closest to the waterfowl display ponds, has been grazed by the geese resulting in very short grass. Because the grass is so short, the weeds are very large and noticeable in this area.
- As the west parking lot is under construction, numerous spots around the perimeter of the lot have vehicle damage from large machines, new soil from construction requires seeding.
- In the front of the building there are several ground squirrel holes.
- Most shrubs are overcrowded, overgrown and have dead branches throughout and the lilacs are long and leggy. Pruning, thinning and replacing lilacs is required.
- Many shrubs missing from design. Replacements required.
- Tree bed under plantings are causing damage to trees and creating untidy beds. Volunteer trees are growing into and damaging intended species.
- 3% of trees on site require removal.
- 18% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	WATER FOWL DISPLAY PONDS	Page 1
Area No.	5c	
Area:		2.8433 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Critical		Grading	Good
Density	Poor		Irrigation	Good
Thatch	Poor		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:				\$ 40,982
Urgent Portion of Turf Repair/Upgrade			73%	\$ 30,120

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Critical	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ 7,350
Urgent Portion of Total Cost of Tree Repair/Upgrade:	40%	\$ 2,950

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Poor	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 2,121.43
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	27%	\$ 578.57

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		-	Overall		-	Ground Squirrel Damage		-		
Centre Area		-	Density		-	Grading Problem		-		
			Thatch		-	Dry Turf Area		-		
						Irrigation Head Damaged		-		
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-	
SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating		
Layout		-	Weeds			-	Ground Squirrel Damage		-	
Weeds		-	Density			-	Grading Problem		-	
Surface		-	Thatch			-	Dry Turf Area		-	
Grading		-								
Est. Cost of Diamond Repair:					\$	-	Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):									\$	-
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Good	Plant Species	Good	Deadfall	Numerous
Plant Species	Poor	Species Extent	Good	Re-growth	Limited
				Weed Infestation	Prevalent
Cost of Natural Area Repair/Upgrade:					\$ 9,950.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Poor	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 26,494
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS	Quantity	
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		- \$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 86,897
	Urgent Portion of Park Repair/Upgrade:	39%	\$ 33,649
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 3.06

NOTES:

- The turf around the display ponds have been grazed by the geese so that it is very short.
- There is pooling at the bottom of the hills from irrigation, grass growth is being restricted.
- The turfed hills are uneven and bumpy, this could possibly be from the amount of irrigation.
- The turf along the edge of the ponds is patchy and worn from both pedestrians and the birds.
- Many of the pathways along the south side of the ponds are uneven. There is pooling occurring on these pathways from the amount of irrigation which is contributing to this erosion and unevenness.
- Old, dead and leggy shrubs were found throughout. Replacements required.
- Shrubs are overgrown and have dead branches throughout. Pruning Required.
- Tree have dead branches and some are suckering at base. Pruning required.
- Trees with dead leaders are present. Replacement recommended.
- 3% of trees on site require removal.
- 35% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	GOOSE ISLAND	Page 1
Area No.	5d	
Area:		5.0809 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	-	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ -
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
		\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):									-	\$	-

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:	\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Good	Plant Species	-	Deadfall	Numerous
Plant Species	Poor	Species Extent	-	Re-growth	Limited
				Weed Infestation	Lim > 1m
Cost of Natural Area Repair/Upgrade:					\$ 40,000.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 40,000
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.79

NOTES:

- The naturalized stand on the north side of the site has lots of caragana. In areas where the caragana is less abundant the trees are propagating well but where the caragana is prevalent it is choking out the small trees and preventing propagation.
- The design intent of this island is unclear. Overall the island appears to be weedy and plant material is struggling to live amongst the pasture sage.
- Areas of snowberry and rose are spreading in some areas providing healthy plant diversity.

AREA REPAIR SUMMARY

Area Name	TERN ISLAND	Page 1
Area No.	6a	
Area:		0.4883 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			\$	-

TREES		
Tree Health	Rating	
General Health	-	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ -
Urgent Portion of Total Cost of Tree Repair/Upgrade:	-	\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating		Turf Condition	Rating		Field Problems		Rating	
Goal Areas		-		Overall	-		Ground Squirrel Damage		-	
Centre Area		-		Density	-		Grading Problem		-	
				Thatch	-		Dry Turf Area		-	
							Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:				\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-	
Urgent Portion of Repair/Upgrade (All fields):								-	\$	-

SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating			
Layout		-	Weeds	-	Ground Squirrel Damage		-			
Weeds		-	Density	-	Grading Problem		-			
Surface		-	Thatch	-	Dry Turf Area		-			
Grading		-								
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:		\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):								-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	Isolated
Plant Species	-	Species Extent	-	Re-growth	Prevalent
				Weed Infestation	Lim < 1m
Cost of Natural Area Repair/Upgrade:					\$ 7,500.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 7,500
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.54

NOTES:

- One open area of pasture sage infestation approximately 10m in diameter.
- One or two open areas appropriate for nesting otherwise the island does not appear to provide good nesting opportunities for shorebirds or waterfowl.

AREA REPAIR SUMMARY

Area Name	WATER FOWL HABITAT	Page 1
Area No.	6b	
Area:		8.6242 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	-	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ -
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
		\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):									-	\$	-

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:	\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	Isolated
Plant Species	Fair	Species Extent	-	Re-growth	Limited
				Weed Infestation	Lim > 1m
Cost of Natural Area Repair/Upgrade:					\$ 175,000.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 175,000
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 2.03

NOTES:

- There are some patches of Canada thistle that are colonizing areas of land 50 to 75 feet in diameter.
- Caragana regrowth is extensive particularly where old plantings are surrounded by grassland.
- Shoreline vegetation is vigorous and clear of invasive species.
- Snowberry and green ash undergrowth is prevalent throughout the area.

AREA REPAIR SUMMARY

Area Name	WASCANA HILL	Page 1
Area No.	6c	
Area:		20.7762 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 2,900
Urgent Portion of Total Cost of Tree Repair/Upgrade:	31%	\$ 900

SHRUB BEDS		
	Rating	
Condition	Fair	
Density	Fair	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		-	Overall		-	Ground Squirrel Damage		-		
Centre Area		-	Density		-	Grading Problem		-		
			Thatch		-	Dry Turf Area		-		
						Irrigation Head Damaged		-		
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-	

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:	\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Poor	Plant Species	Fair	Deadfall	Non-Apparent
Plant Species	Poor	Species Extent	Poor	Re-growth	50% of Area
				Weed Infestation	Lim > 1m
Cost of Natural Area Repair/Upgrade:					\$ 74,850.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity	
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ 2,430
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		100% \$ 2,430

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 80,180
	Urgent Portion of Park Repair/Upgrade:	4%	\$ 3,330
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.39

NOTES:

- Bollards are in generally good condition.
- Bollards along Assiniboine Ave are not uniform in appearance. Replacements recommended.
- There was a trend that bollards along McDonald and up the hill were cracking along the length of the timber grain. Recommend monitoring bollards over time for moisture damage/rot.
- Native plant stands along the shore line in this area was generally well established and in good condition.
- Caragana has colonized along sections of the shoreline. Removal of all Caragana from this naturalized habitat area is recommended. Replace with native shrub material.
- Canada Thistle has colonized large areas of the Hill particularly at the north end. Aside from Canada Thistle being on the Noxious Weed List this infestation of a very aggressive weed needs to be controlled to encourage a more diverse ground cover.
- 2% of trees on site require removal.
- 4% of trees on site require pruning.
- Evidence of snowberry and rose regrowth throughout area.

AREA REPAIR SUMMARY

Area Name	DOUGLAS PARK	Page 1
Area No.	6d	
Area:		29.4147 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Good	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 58,317
Urgent Portion of Turf Repair/Upgrade			86% \$ 50,265

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	Poor	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 140,130
Urgent Portion of Total Cost of Tree Repair/Upgrade:	11%	\$ 14,850

SHRUB BEDS		
	Rating	
Condition	Critical	
Density	Poor	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 265,125.54
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	77%	\$ 203,039.80

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football						
General	Rating	Turf Condition	Rating	Field Problems	Rating	
Goal Areas	-	Overall	Poor	Ground Squirrel Damage	Good	
Centre Area	-	Density	Good	Grading Problem	Good	
		Thatch	Good	Dry Turf Area	Good	
Estimated Cost of Field Turf Repair/Upgrade:			\$ -	Irrigation Head Damaged	Good	
				Est. Cost to Repair Problems:	\$ -	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):					\$ -	
Urgent Portion of Repair/Upgrade (All fields):					\$ -	

SPORTSFIELDS - Ball Diamonds						
Infield	Rating	Outfield Turf Condition		Diamond Problems	Rating	
Layout	Good	Weeds	Fair	Ground Squirrel Damage	Good	
Weeds	Good	Density	Fair	Grading Problem	Good	
Surface	Fair	Thatch	Fair	Dry Turf Area	Good	
Grading	Fair					
Est. Cost of Diamond Repair:			\$ -	Est. Cost of Problem Repair:	\$ -	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):					\$ -	
Urgent Portion of Repair/Upgrade (All diamonds):					\$ -	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Poor	Plant Species	-	Deadfall	-
Plant Species	Fair	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Poor	
Wood Chip	64.3%	Poor	
Estimated Cost of Surface Repair/Upgrade:			\$ 6,238
Urgent Portion of Total Cost for Surface Repair/Upgrade:			-

BOLLARDS	Quantity	
Repair		
Replace	24	
Estimated Total Cost of Bollard Repair/Upgrade:		\$ 1,440
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		100% \$ 1,440

SITE FURNITURE	Rating	
Benches	Fair	
Picnic Tables	Fair	
BBQ / Trash Units	-	
Information Kiosks	-	
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ 2,600
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		98% \$ 2,550

	Total Estimated Cost for Park Repair/Upgrade:		\$ 473,851
	Urgent Portion of Park Repair/Upgrade:	57%	\$ 272,145
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.61

NOTES:

- Vehicle and pedestrian wear is prominent in the park. There is a definite lack of pathways so maintenance vehicle have cut paths through the dryland grass.
- There are no pedestrian pathways on the south end of the site so pedestrians cut across the grass to get to the ball diamonds.
- The pathways on the north side of the site are in disrepair. Inadequate quick fixes have been applied such as patches of mulch.
- Generally, shrubs throughout the park are overgrown, long and leggy and have little to no foliage within interior of shrub. Replacements and Heavy Pruning Recommended.
- Some shrubs missing from design or dead. Replacements Recommended.
- Siberian elm in this sector are dying or in poor health. Should be removed to eliminate bark beetle habitat.
- Free standing poplars in the north grass area have been unevenly pruned and are about 50% of these should be removed to prevent branches falling.
- 43% of the trees on site require pruning, an annual pruning program should be initiated.
- 2% of the trees on site require removal.

Area Name	MAINTENANCE YARD	Page 1
Area No.	6e	
	Area:	3.1346 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			-	\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ 9,550
Urgent Portion of Total Cost of Tree Repair/Upgrade:	42%	\$ 4,050

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Heavy	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 31,405.63
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	74%	\$ 23,338.13

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Fair	
Edging	Fair	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 488
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	0%	\$ -

SPORTSFIELDS - Soccer/Football									
General		Rating	Turf Condition		Rating	Field Problems		Rating	
Goal Areas		-	Overall		-	Ground Squirrel Damage		-	
Centre Area		-	Density		-	Grading Problem		-	
			Thatch		-	Dry Turf Area		-	
						Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-			
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-
SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating	
Layout		-	Weeds			Ground Squirrel Damage		-	
Weeds		-	Density			Grading Problem		-	
Surface		-	Thatch			Dry Turf Area		-	
Grading		-							
Est. Cost of Diamond Repair:					\$	-			
						Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Good	Plant Species	-	Deadfall	Numerous
Plant Species	Good	Species Extent	-	Re-growth	50% of Area
				Weed Infestation	Prevalent
Cost of Natural Area Repair/Upgrade:					\$ 9,000.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 50,443
	Urgent Portion of Park Repair/Upgrade:	54%	\$ 27,388
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.61

NOTES:

- Ground Squirrel holes are numerous in the area of grass in front of the Nursery
- Pedestrian wear paths are found throughout all of the grass areas on site.
- Caragana should be removed from site because of its invasive tendencies and its critical condition.
- 3% of trees on site require removal.
- 15% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	WASCANA PARKWAY (WP)	Page 1
Area No.	7a	
Area:		9.459 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	Good		Grading	Good
Density	Good		Irrigation	Good
Thatch	Poor		Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:				\$ 190,907
Urgent Portion of Turf Repair/Upgrade			73%	\$ 138,962

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Critical	
Estimated Total Cost of Tree Repair/Upgrade		\$ 107,650
Urgent Portion of Total Cost of Tree Repair/Upgrade:	27%	\$ 29,550

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 107,976.11
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	41%	\$ 44,130.10

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Fair	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 954
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	0%	\$ -

SPORTSFIELDS - Soccer/Football						
General	Rating		Turf Condition	Rating		Field Problems
Goal Areas	-		Overall	-		Ground Squirrel Damage
Centre Area	-		Density	-		Grading Problem
			Thatch	-		Dry Turf Area
Estimated Cost of Field Turf Repair/Upgrade:						Irrigation Head Damaged
						Est. Cost to Repair Problems:
						\$ -
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):						\$ -
Urgent Portion of Repair/Upgrade (All fields):						\$ -
SPORTSFIELDS - Ball Diamonds						
Infield	Rating		Outfield Turf Condition			Diamond Problems
Layout	-		Weeds	-		Ground Squirrel Damage
Weeds	-		Density	-		Grading Problem
Surface	-		Thatch	-		Dry Turf Area
Grading	-					
Est. Cost of Diamond Repair:						Est. Cost of Problem Repair:
						\$ -
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Poor	Plant Species	-	Deadfall	-
Plant Species	Poor	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip		
Surface	Percent of Total Surfacing Needing Repair	Rating
Crusher Dust	-	-
Wood Chip		
Estimated Cost of Surface Repair/Upgrade:		\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:		\$ -

BOLLARDS	Quantity	
Repair	2	
Replace	5	
Estimated Total Cost of Bollard Repair/Upgrade:		\$ 360
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		100% \$ 360

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 407,847
	Urgent Portion of Park Repair/Upgrade:	52%	\$ 213,003
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 4.31

NOTES:

- Curb drain construction has left patches of soil in the turf. This requires grading and seeding.
- There is an abundance of ground squirrel holes on the west side of Wascana Parkway.
- Generally, shrubs are overgrown, long and leggy and exceed bed size. Replacements and heavy pruning required throughout.
- In the median shrubs are much smaller but many require pruning and numerous require replacement.
- Throughout there are dead branches of trees and suckering at base. Pruning required.
- There are some dead trees on site and others missing from the design. These should all be replaced.
- Generally, spruce were noted as having spider mite. Monitor spruce health throughout site.
- Trunk damage throughout turf areas. Tree guards recommended for all young trees in turf areas.
- 2% of trees on site require removal.
- 7% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	U OF R MAIN CAMPUS	Page 1
Area No.	7b	
Area:		14.6588 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Fair
Density	Good	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 368,107
Urgent Portion of Turf Repair/Upgrade		84%	\$ 309,855

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Fair	
Root Damage	Fair	
Estimated Total Cost of Tree Repair/Upgrade		\$ 113,440
Urgent Portion of Total Cost of Tree Repair/Upgrade:	18%	\$ 19,900

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 454,314.08
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	29%	\$ 132,398.47

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 18,130
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	14%	\$ 2,605

SPORTSFIELDS - Soccer/Football						
General	Rating	Turf Condition	Rating	Field Problems	Rating	
Goal Areas	Good	Overall	Good	Ground Squirrel Damage	Good	
Centre Area	Poor	Density	Fair	Grading Problem	Good	
		Thatch	Poor	Dry Turf Area	Good	
Estimated Cost of Field Turf Repair/Upgrade:				Irrigation Head Damaged	Good	
				Est. Cost to Repair Problems:	\$ -	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):						\$ 78,570
Urgent Portion of Repair/Upgrade (All fields):						34% \$ 26,330

SPORTSFIELDS - Ball Diamonds						
Infield	Rating	Outfield Turf Condition		Diamond Problems	Rating	
Layout	-	Weeds	-	Ground Squirrel Damage	-	
Weeds	-	Density	-	Grading Problem	-	
Surface	-	Thatch	-	Dry Turf Area	-	
Grading	-					
Est. Cost of Diamond Repair:			\$ -	Est. Cost of Problem Repair:	\$ -	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):						\$ -
Urgent Portion of Repair/Upgrade (All diamonds):						\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	-
Plant Species	Good	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Fair	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 1,675
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		- \$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 1,034,236
	Urgent Portion of Park Repair/Upgrade:	47%	\$ 491,088
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 7.06

NOTES:

- There are numerous pedestrian wear paths across the turf. This is common beside Wascana Parkway where students cross to access the campus and along University Dr N and E where there is no sidewalk.
- Construction areas require grading, sod and planting bed repairs.
- Generally, shrubs are overgrown with dead branches throughout and exceed the bed size. Many are leggy with no foliage within the interior. Pruning/thinning is required. Dead shrubs and many with no interior foliage require replacement.
- Foundation plantings are often too close to building face. Thinning/pruning recommended.
- Tree bed under plantings are becoming overgrown with volunteers, caragana being one of the species found here, clean up required.
- Tree roots are growing through the turf on the north side of the library affecting grass cutting and creating a possible tripping hazard.
- Tree beds are overcrowded.
- 3% of trees on site require removal.
- 23% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	WEST FLOOD PLAIN	Page 1
Area No.	7c	
Area:		17.8604 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Fair	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 480
Urgent Portion of Turf Repair/Upgrade			0% \$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 60,400
Urgent Portion of Total Cost of Tree Repair/Upgrade:	13%	\$ 8,100

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 6,427.14
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	0%	\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football					
General	Rating	Turf Condition	Rating	Field Problems	Rating
Goal Areas	-	Overall	-	Ground Squirrel Damage	-
Centre Area	-	Density	-	Grading Problem	-
		Thatch	-	Dry Turf Area	-
Estimated Cost of Field Turf Repair/Upgrade:			\$ -	Irrigation Head Damaged	-
				Est. Cost to Repair Problems:	\$ -
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):					\$ -
Urgent Portion of Repair/Upgrade (All fields):					\$ -

SPORTSFIELDS - Ball Diamonds					
Infield	Rating	Outfield Turf Condition		Diamond Problems	Rating
Layout	-	Weeds	-	Ground Squirrel Damage	-
Weeds	-	Density	-	Grading Problem	-
Surface	-	Thatch	-	Dry Turf Area	-
Grading	-				
Est. Cost of Diamond Repair:			\$ -	Est. Cost of Problem Repair:	\$ -
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):					\$ -
Urgent Portion of Repair/Upgrade (All diamonds):					\$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	Good	Deadfall	Isolated
Plant Species	Fair	Species Extent	Good	Re-growth	50% of area
				Weed Infestation	Lim < 1m
Cost of Natural Area Repair/Upgrade:					\$ 14,675.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 81,982
	Urgent Portion of Park Repair/Upgrade:	10%	\$ 8,100
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.46

NOTES:

Restoration Site:

The display area is established by the Saskatchewan Watershed Authority and was seeded in 2003. The objective of the display is 'to preserve genetic biodiversity, create wildlife habitat and provide recreational and educational opportunities'. At the time of inspection this summer nearly the entire area was covered with five plant species, all of which are considered weeds. Bluebur and Scentless chamomile are both introduced species and both cover extensive areas of the display. Canada thistle, foxtail barley and sow thistle make up the remaining invasive plant species growing predominantly over the area. The display is not meeting its objectives and therefore needs either extensive care and maintenance to be re-established or it should be cultivated and reseeded with a dryland grass species to prevent the spread of weeds into adjacent park area.

AREA REPAIR SUMMARY

Area Name	FNU CAMPUS	Page 1
Area No.	7d	
Area:		2.4822 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	-
Density	Good	Irrigation	-
Thatch	Good	Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	-	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
	\$	-
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
	-	\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football						
General	Rating	Turf Condition	Rating	Field Problems	Rating	
Goal Areas	-	Overall	-	Ground Squirrel Damage	-	
Centre Area	-	Density	-	Grading Problem	-	
		Thatch	-	Dry Turf Area	-	
Estimated Cost of Field Turf Repair/Upgrade:			\$ -	Irrigation Head Damaged	-	
				Est. Cost to Repair Problems:	\$ -	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):					\$ -	
Urgent Portion of Repair/Upgrade (All fields):					\$ -	

SPORTSFIELDS - Ball Diamonds						
Infield	Rating	Outfield Turf Condition		Diamond Problems	Rating	
Layout	-	Weeds	-	Ground Squirrel Damage	-	
Weeds	-	Density	-	Grading Problem	-	
Surface	-	Thatch	-	Dry Turf Area	-	
Grading	-					
Est. Cost of Diamond Repair:			\$ -	Est. Cost of Problem Repair:	\$ -	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):					\$ -	
Urgent Portion of Repair/Upgrade (All diamonds):					\$ -	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ 3,230.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 3,230
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.13

NOTES:

- Native plant display area requires some maintenance. In the display of herbaceous perennials 7 plant species out of the 16 that are identified by the interpretive panels can be found on the site. In the display of woody plants 6 of the twelve species identified on the interpretive panels can be found on site. Although the interpretive panels are very well prepared and informative, attention needs to be given to establishing a better representation of plant material.
- Outside of the display gardens the ground cover consists of native plant species and invasive weed species. Here the display would be more vigorous and effective if attention were paid to controlling weed species to showcase the relatively good representation of native plant species present.

AREA REPAIR SUMMARY

Area Name	INNOVATION PLACE	Page 1
Area No.	7e	
Area:		9.4168 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Good	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:			\$ 34,532
Urgent Portion of Turf Repair/Upgrade		49%	\$ 16,860

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 8,550
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
		26% \$ 2,250

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Poor	
Weeds	Moderate	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 282,442.26
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		
		19% \$ 53,354.57

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 3,562
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		24% \$ 849

SPORTSFIELDS - Soccer/Football											
General		Rating	Turf Condition		Rating	Field Problems		Rating			
Goal Areas		-	Overall		-	Ground Squirrel Damage		-			
Centre Area		-	Density		-	Grading Problem		-			
			Thatch		-	Dry Turf Area		-			
						Irrigation Head Damaged		-			
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-	
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-		
SPORTSFIELDS - Ball Diamonds											
Infield		Rating	Outfield Turf Condition			Diamond Problems			Rating		
Layout		-	Weeds			Ground Squirrel Damage			-		
Weeds		-	Density			Grading Problem			-		
Surface		-	Thatch			Dry Turf Area			-		
Grading		-									
Est. Cost of Diamond Repair:					\$	-	Est. Cost of Problem Repair:			\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):									\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-		

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	-
Plant Species	Fair	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	100.0%	Fair	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ 7,776
Urgent Portion of Total Cost for Surface Repair/Upgrade:			0% \$ -

BOLLARDS	Quantity	
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 336,862
	Urgent Portion of Park Repair/Upgrade:	22%	\$ 73,314
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 3.58

NOTES:

- The squares of turf in front of The Terrace, the south side, are dry around the edges.
- There is a pedestrian wear path along University Dr S. A pathway or a sidewalk should be considered.
- The Virginia Creepers are unevenly spaced in the parking lot medians and numerous appear to be missing.
- The trees in this section are much younger than we have seen in the rest of Wascana Centre. As a result these trees are generally in good condition due to not having seen as much wear.
- The young, very small trees in the medians of the western parking lots should be staked.
- Generally, shrubs are overgrown, some have dead branches throughout. Pruning required.
- Some shrubs are missing or dead. Replacements recommended.
- Southeast parking lot (10 Research Drive) is screened with shrubs along north and east sides preventing pedestrians from accessing road, adjacent buildings and sports field. It is recommended to design designated paths that connect to road and sidewalk north of parking lot.
- 1% of trees on site require removal.
- 3% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	U OF R SPORT FIELD	Page 1
Area No.	7f	
Area:		6.3281 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 11,850
Urgent Portion of Total Cost of Tree Repair/Upgrade:	19%	\$ 2,250

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Poor	
Weeds	Heavy	
Mulch	Insufficient	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	-	\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		Good	Overall		Good	Ground Squirrel Damage		Good		
Centre Area		Good	Density		Good	Grading Problem		Good		
			Thatch		Good	Dry Turf Area		Good		
						Irrigation Head Damaged		Good		
Estimated Cost of Field Turf Repair/Upgrade:					\$	11,550	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	11,550
Urgent Portion of Repair/Upgrade (All fields):							94%	\$	10,910	

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		Good	Weeds	Good	Ground Squirrel Damage		Good		
Weeds		Good	Density	Poor	Grading Problem		Good		
Surface		Fair	Thatch	Poor	Dry Turf Area		Good		
Grading		Fair							
Est. Cost of Diamond Repair:				\$	35,928	Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	35,928
Urgent Portion of Repair/Upgrade (All diamonds):						63%	\$	22,727	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity	
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 59,328
	Urgent Portion of Park Repair/Upgrade:	60%	\$ 35,887
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.94

NOTES:

- Shrubs along west side of gravel parking lot are independent free standing plants that don't relate to each other and have no positive impact in the landscape. Could be removed.
- 10% of trees on site require removal.
- 4% of trees on site require pruning.

Area Name	COMMUNITY GARDENS		Page 1
Area No.	7g		
		Area:	11.0349 ha

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Poor	
Estimated Total Cost of Tree Repair/Upgrade		\$ 28,560
Urgent Portion of Total Cost of Tree Repair/Upgrade:	52%	\$ 14,800

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football					
General	Rating		Turf Condition	Rating	
Goal Areas	-		Overall	-	
Centre Area	-		Density	-	
			Thatch	-	
Estimated Cost of Field Turf Repair/Upgrade:			\$ -		
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):					\$ -
Urgent Portion of Repair/Upgrade (All fields):					- \$ -
SPORTSFIELDS - Ball Diamonds					
Infield	Rating		Outfield Turf Condition		
Layout	-		Weeds	-	
Weeds	-		Density	-	
Surface	-		Thatch	-	
Grading	-				
Est. Cost of Diamond Repair:			\$ -		
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):					\$ -
Urgent Portion of Repair/Upgrade (All diamonds):					- \$ -

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Good	Plant Species	-	Deadfall	-
Plant Species	Good	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair	2		
Replace	18		
Estimated Total Cost of Bollard Repair/Upgrade:			\$ 1,140
Urgent Portion of Total Cost of Bollard Repair/Upgrade:			100% \$ 1,140

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 104,898
	Urgent Portion of Park Repair/Upgrade:	79%	\$ 82,758
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.95

NOTES:

- Generally shrubs are overgrown, long and leggy, dead branches throughout. Replacements and heavy pruning recommended.
- Dead and missing shrubs in assessment area. Replacements required.
- Generally, trees have dead branches throughout. Pruning required.
- Rodent damage of trees is prevalent along Gordon road. Replacements required.
- Many poplars have dead leaders or many dead limbs. Replacement recommended.
- Most elms are suffering along Bypass. Replacements recommended.
- 9% of trees on site require removal.
- 50% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	HILL	Page 1
Area No.	8a	
Area:		2.3011 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			\$	-

TREES		
Tree Health	Rating	
General Health	-	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ -
Urgent Portion of Total Cost of Tree Repair/Upgrade:	-	\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating		Turf Condition	Rating		Field Problems		Rating	
Goal Areas		-		Overall	-		Ground Squirrel Damage		-	
Centre Area		-		Density	-		Grading Problem		-	
				Thatch	-		Dry Turf Area		-	
							Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:				\$	-	Est. Cost to Repair Problems:		\$	-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-	
Urgent Portion of Repair/Upgrade (All fields):								-	\$	-

SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating			
Layout		-	Weeds	-	Ground Squirrel Damage		-			
Weeds		-	Density	-	Grading Problem		-			
Surface		-	Thatch	-	Dry Turf Area		-			
Grading		-								
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:		\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):								-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	-
Plant Species	Fair	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ 11,150.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 11,150
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.48

NOTES:

- Top of Hill is crater like in shape with a series of depressions in the centre and a ridge of higher land around the outside. The whole hill top is approximately 30 feet above the surrounding agricultural field.
- Approximately 8 areas of ponded water on the hill top. Each is holding adequate water to support the naturalization of a population of sedges and cattails. Also associated with the ponds are nesting Black birds.
- Higher areas of ground on the Hill are being colonized by extensive beds of Canada thistle. Some corrective action should be taken to control spread of thistles.
- Other ground cover vegetation on the Hill top includes Foxtail Barley, clover, Common dock and Brome grass.

AREA REPAIR SUMMARY

Area Name	EAST FLOOD PLAIN	Page 1
Area No.	8b	
Area:		50.2808 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			\$	-

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ 4,500
Urgent Portion of Total Cost of Tree Repair/Upgrade:	0%	\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		\$ -

SPORTSFIELDS - Soccer/Football									
General		Rating		Turf Condition	Rating		Field Problems	Rating	
Goal Areas		-		Overall	-		Ground Squirrel Damage	-	
Centre Area		-		Density	-		Grading Problem	-	
				Thatch	-		Dry Turf Area	-	
							Irrigation Head Damaged	-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:	\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-

SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating			
Layout		-	Weeds	-	Ground Squirrel Damage		-			
Weeds		-	Density	-	Grading Problem		-			
Surface		-	Thatch	-	Dry Turf Area		-			
Grading		-								
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:		\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):								-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Fair	Plant Species	-	Deadfall	Numerous
Plant Species	Poor	Species Extent	-	Re-growth	50% of Area
				Weed Infestation	Lim < 1m
Cost of Natural Area Repair/Upgrade:					\$ 24,985.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 29,485
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.06

NOTES:

- Large part of this section is open grassland. Grass cover is very uniform and in good health, although all grasses species are not native. There are very few locations where intrusive weeds such as Canada thistle have established.
- Remnants of trees include Silverberry, Russian olive, Siberian elm, Green ash, poplar and willow. Most trees are found growing singly or in groups of two or three scattered throughout the landscape. There are only four major tree stands which provide treed areas of 30 metres to over 150 metres in diameter.
- The grassland area combined with the free standing trees appear to provide habitat for song birds and ducks. There was no evidence of geese in this area at the time of inspection.
- The ground cover in numerous areas consists of regrowth of woody tree and shrub species from seed or creeping rootstock. Species present are: Green Ash, Snowberry, Silverberry, Russian Olive, Willow, and Poplar.

AREA REPAIR SUMMARY

Area Name	SIAS	Page 1
Area No.	8c	
Area:		14.8602 ha

TURF			
Overall Turf Rating		Turf Problem Rating	
Issue	Rating	Problem	Rating
Weeds	Good	Grading	Good
Density	Good	Irrigation	Good
Thatch	Good	Turf Wear	Good
Estimated Total Cost of Turf Repair/Upgrade:		\$ 195,872	
Urgent Portion of Turf Repair/Upgrade		87%	\$ 171,037

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$ 53,870
Urgent Portion of Total Cost of Tree Repair/Upgrade:		
	16%	\$ 8,450

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Heavy	
Mulch	Heavy	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 62,841.21
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		
	22%	\$ 13,992.35

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	Good	
Edging	Good	
Weeds	Good	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ 2,043
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:		81% \$ 1,647

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		-	Overall		-	Ground Squirrel Damage		-		
Centre Area		-	Density		-	Grading Problem		-		
			Thatch		-	Dry Turf Area		-		
						Irrigation Head Damaged		-		
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-	
Urgent Portion of Repair/Upgrade (All fields):						-	\$	-		
SPORTSFIELDS - Ball Diamonds										
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating		
Layout		-	Weeds		-	Ground Squirrel Damage		-		
Weeds		-	Density		-	Grading Problem		-		
Surface		-	Thatch		-	Dry Turf Area		-		
Grading		-								
Est. Cost of Diamond Repair:					\$	-	Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-	
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-		

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Good	Plant Species	-	Deadfall	-
Plant Species	Poor	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ 23,636.00

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		- \$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 338,262
	Urgent Portion of Park Repair/Upgrade:	58%	\$ 195,126
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 2.28

NOTES:

- Ground squirrel holes are prevalent throughout the site. Beside the holes there is often a large pile of soil which is very noticeable and unsightly. These holes can also be a safety hazard.
- The grass on the campus is generally quite dry. The irrigation should be considered and possibly turned on more often.
- Green Ash in parking lot medians are showing drought stress and therefore dying back. Perhaps installation of drip irrigation system should be considered to prevent tree loss.
- Pruning of major limbs is common, this will leave the tree trunks weakened and more likely to fall during storms. Public safety is in jeopardy.
- Canada thistle is growing through mulch in tree beds at front of SIAST building.
- Many shrubs are missing or dead. Replacements required.
- Shrubs are overgrown and have dead branches throughout. Pruning required.
- 4% of trees on site require removal.
- 13% of trees on site require pruning.

AREA REPAIR SUMMARY

Area Name	MACKENZE PROPERTY	Page 1
Area No.	8d	
Area:		2.8548 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	Fair	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ 12,500
Urgent Portion of Total Cost of Tree Repair/Upgrade:	0%	\$ -

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	-	\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating		Turf Condition	Rating		Field Problems		Rating	
Goal Areas		-		Overall	-		Ground Squirrel Damage		-	
Centre Area		-		Density	-		Grading Problem		-	
				Thatch	-		Dry Turf Area		-	
							Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:				\$			Est. Cost to Repair Problems:		\$	
									-	
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	
Urgent Portion of Repair/Upgrade (All fields):									\$	

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:	\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Good	Plant Species	-	Deadfall	-
Plant Species	Fair	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 12,500
	Urgent Portion of Park Repair/Upgrade:	0%	\$ -
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 0.44

NOTES:

- Grading of the site is uneven.
- Most of the site is covered with grass species such as Brome grass and Crested Wheat grass. Grass cover is healthy and does not contain any areas where weeds have come to dominate the plant population.
- 0% of trees on site require removal.
- 100% of trees on site require pruning.

Area Name	BYPASS PLANTINGS	Page 1
Area No.	8e	
	Area:	22.5413 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			-	\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	Poor	
Root Damage	Poor	
Estimated Total Cost of Tree Repair/Upgrade		\$198,630
Urgent Portion of Total Cost of Tree Repair/Upgrade:	34%	\$ 67,050

SHRUB BEDS		
	Rating	
Condition	Good	
Density	Fair	
Weeds	Heavy	
Mulch	Adequate	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 45,715.58
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:		
	33%	\$ 15,181.36

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football									
General		Rating	Turf Condition		Rating	Field Problems		Rating	
Goal Areas		-	Overall		-	Ground Squirrel Damage		-	
Centre Area		-	Density		-	Grading Problem		-	
			Thatch		-	Dry Turf Area		-	
						Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-			
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-
Urgent Portion of Repair/Upgrade (All fields):						-	\$	-	
SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating	
Layout		-	Weeds			Ground Squirrel Damage		-	
Weeds		-	Density			Grading Problem		-	
Surface		-	Thatch			Dry Turf Area		-	
Grading		-							
Est. Cost of Diamond Repair:					\$	-			
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Poor	Plant Species	-	Deadfall	-
Plant Species	Good	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip		
Surface	Percent of Total Surfacing Needing Repair	Rating
Crusher Dust	-	-
Wood Chip		
Estimated Cost of Surface Repair/Upgrade:		\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:		\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 244,346
	Urgent Portion of Park Repair/Upgrade:	34%	\$ 82,231
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.08

NOTES:

- Shrubs in this section are in fair to poor condition. Shrub beds that have no appreciable impact in the landscape could be removed.
- Multi-stemmed trees in these beds need pruning and thinning for sanitation purposes
- Planting beds contain weed infestation and some intrusion of grasses.
- Colorado Spruce at northeast and southeast extensions have died and require removal.
- 8% of trees on site require removal.
- 29% of trees on site require pruning.

Area Name	WP EXTENSION PLANTING		Page 1
Area No.	8f		
		Area:	6.4266 ha

TURF				
Overall Turf Rating			Turf Problem Rating	
Issue	Rating		Problem	Rating
Weeds	-		Grading	-
Density	-		Irrigation	-
Thatch	-		Turf Wear	-
Estimated Total Cost of Turf Repair/Upgrade:			\$	-
Urgent Portion of Turf Repair/Upgrade			-	\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		\$ 87,800
Urgent Portion of Total Cost of Tree Repair/Upgrade:	12%	\$ 10,800

SHRUB BEDS		
	Rating	
Condition	Fair	
Density	Fair	
Weeds	Moderate	
Mulch	Adequate	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ 26,085.72
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	39%	\$ 10,165.91

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football									
General		Rating	Turf Condition		Rating	Field Problems		Rating	
Goal Areas		-	Overall		-	Ground Squirrel Damage		-	
Centre Area		-	Density		-	Grading Problem		-	
			Thatch		-	Dry Turf Area		-	
						Irrigation Head Damaged		-	
Estimated Cost of Field Turf Repair/Upgrade:					\$	-			
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):								\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-
SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition			Diamond Problems		Rating	
Layout		-	Weeds			Ground Squirrel Damage		-	
Weeds		-	Density			Grading Problem		-	
Surface		-	Thatch			Dry Turf Area		-	
Grading		-							
Est. Cost of Diamond Repair:					\$	-			
						Est. Cost of Problem Repair:		\$	-
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):							-	\$	-

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	Good	Plant Species	-	Deadfall	-
Plant Species	Good	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS		Quantity
Repair		
Replace		
Estimated Total Cost of Bollard Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$ -

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 113,886
	Urgent Portion of Park Repair/Upgrade:	18%	\$ 20,966
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ 1.77

NOTES:

- There is excessive pooling in planting beds along the road.
- Some of the shrub beds along the road that have become overgrown and are starting to dieback are losing their effectiveness. Beds showing over 25% dieback should be removed.
- On the north side of the Parkway extension and closer to the Bypass Interchange the newer planting beds are fairly extensively infested with weeds
- 31% of trees on site require pruning
- 3% of trees on site require removal.

AREA REPAIR SUMMARY

Area Name	SHELTERBELT	Page 1
Area No.	8g	
Area:		0 ha

TURF			
Overall Turf Rating			Turf Problem Rating
Issue	Rating		Problem Rating
Weeds	-		Grading
Density	-		Irrigation
Thatch	-		Turf Wear
Estimated Total Cost of Turf Repair/Upgrade:			\$ -
Urgent Portion of Turf Repair/Upgrade			\$ -

TREES		
Tree Health	Rating	
General Health	Good	
Trunk Damage	-	
Root Damage	-	
Estimated Total Cost of Tree Repair/Upgrade		
		\$291,750
Urgent Portion of Total Cost of Tree Repair/Upgrade:	41%	\$118,350

SHRUB BEDS		
	Rating	
Condition	-	
Density	-	
Weeds	-	
Mulch	-	
Estimated Total Cost of Shrub Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Shrub Bed Repair/Upgrade:	-	\$ -

FLOWER / PERENNIAL BEDS		
	Rating	
Soil	-	
Edging	-	
Weeds	-	
Estimated Total Cost of Flower Bed Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Flower Bed Repair/Upgrade:	-	\$ -

SPORTSFIELDS - Soccer/Football										
General		Rating	Turf Condition		Rating	Field Problems		Rating		
Goal Areas		-	Overall		-	Ground Squirrel Damage		-		
Centre Area		-	Density		-	Grading Problem		-		
			Thatch		-	Dry Turf Area		-		
						Irrigation Head Damaged		-		
Estimated Cost of Field Turf Repair/Upgrade:					\$	-	Est. Cost to Repair Problems:		\$	-
Estimated Total Cost for Soccer/Football Repair/Upgrade (All fields):									\$	-
Urgent Portion of Repair/Upgrade (All fields):							-	\$	-	

SPORTSFIELDS - Ball Diamonds									
Infield		Rating	Outfield Turf Condition		Diamond Problems		Rating		
Layout		-	Weeds	-	Ground Squirrel Damage		-		
Weeds		-	Density	-	Grading Problem		-		
Surface		-	Thatch	-	Dry Turf Area		-		
Grading		-							
Est. Cost of Diamond Repair:				\$	-	Est. Cost of Problem Repair:	\$	-	
Estimated Total Cost for Ball Diamond Repair/Upgrade (All diamonds):								\$	-
Urgent Portion of Repair/Upgrade (All diamonds):						-	\$	-	

NATURALIZED AREAS					
Grass / Herbaceous Areas	Rating	Trees and Shrubs	Rating	Native Plant Stands	Rating
Ground Cover	-	Plant Species	-	Deadfall	-
Plant Species	-	Species Extent	-	Re-growth	-
				Weed Infestation	-
Cost of Natural Area Repair/Upgrade:					\$ -

PATHWAYS - Crusher Dust and Wood Chip			
Surface	Percent of Total Surfacing Needing Repair	Rating	
Crusher Dust	-	-	
Wood Chip			
Estimated Cost of Surface Repair/Upgrade:			\$ -
Urgent Portion of Total Cost for Surface Repair/Upgrade:			\$ -

BOLLARDS	Quantity		
Repair			
Replace			
Estimated Total Cost of Bollard Repair/Upgrade:		\$	-
Urgent Portion of Total Cost of Bollard Repair/Upgrade:		\$	-

SITE FURNITURE	Rating	
Benches		
Picnic Tables		
BBQ / Trash Units		
Information Kiosks		
Estimated Total Cost of Site Furniture Repair/Upgrade:		\$ -
Urgent Portion of Total Cost of Site Furniture Upgrade / Repair		\$ -

	Total Estimated Cost for Park Repair/Upgrade:		\$ 291,750
	Urgent Portion of Park Repair/Upgrade:	41%	\$ 118,350
	Estimated Cost per Hectare for Park Repair/Upgrade:		\$ -

NOTES:

- Overall the shelterbelt has become a large component of an otherwise agricultural landscape. Although the shelterbelt has areas of missing plant material it does provide the overall effect of a line of trees defining the southern boundary of Wascana Centre. Subtly the shelterbelt has enclosed the farm land within the area considered to be Wascana Centre Authority and therefore efforts should be continued to maintain tree health and tree replacement. Tree replacement efforts should be prioritized to focus on the species such as Scots pine, White and Colorado spruce, larch and Green Ash which have longer life expectancy and therefore will become the predominant species in the next 50 years. For the purposes of weed control consideration should be given to providing one mowing cut in June to target seed production of invasive broadleaf weeds. In areas where Green Ash is not growing well American elm should be considered an alternate.